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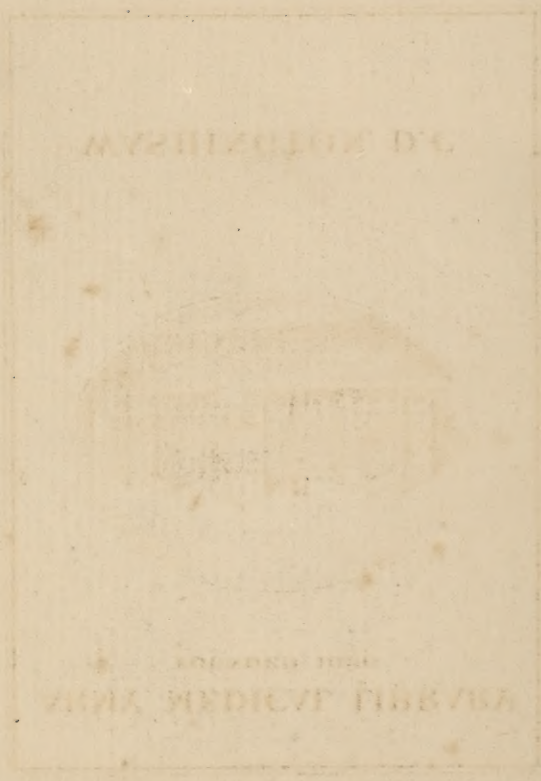

THE

# CHILDREN OF SILENCE;

OR,

## THE STORY OF THE DEAF.

BY

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# PREFACE.

THIS book has grown out of some special studies of the Author intended for his own information, the more intelligently to discharge his duties as a Director of the "Pennsylvania Institution for the Deaf and Dumb." The special character of the field and its remoteness from the ordinary range of literature devolved upon him considerable reading, research, and examination to gain the knowledge desired.

These investigations proved so interesting and instructive, and were found to involve so many things of general importance to society, that, having made a large body of notes of what thus came into view, he felt that it would be a satisfaction to himself, and perhaps of interest and profit to others, to write out what he had gath-



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ered and put the same in suitable form to be read.

The idea of producing an elaborate scientific treatise was not at all in mind. The intention was simply to state some of the most vital facts, with such comments as might seem of worth.

Having thus written nearly all that appears in the following pages, the manuscript was submitted to one of the most active and prominent of his colleagues in the directorship of the Pennsylvania Institution, who volunteered to say: "Mrs. G. and I read the whole of it aloud with great interest. I was much surprised at the amount of statistics you had gathered together, and the deductions therefrom seemed to me all fair and proper. Now that all things bearing upon the question of heredity attract so much attention, that part in particular will be read with much interest by all. I trust that you will not, by keeping it in its present form, confine the pleasure of its perusal to such a limited number."

The same was likewise submitted to the Principal of the Pennsylvania Institution, Mr. A. L. E. Crouter, who returned it with a note, saying, "I return your manuscript after having read and re-read it with exceeding pleasure and profit. I know of no work containing, in such concise form, so varied and valuable statistics concerning the deaf. Your treatment of the methods of instruction at present pursued is impartial and clear, and will meet with approbation in quarters where the difficulties of educating the deaf are best understood. I hope you will put it in press. A book of this kind is much needed in institutions for the deaf and by those interested in the unfortunate."

Remembering the sparseness of his own information when commencing these inquiries, considering what is likely the situation of many others, and with his convictions assured by the statements and wishes of those who have read the manuscript, the writer has been persuaded to print the matter thus collected, and now com-

mits this brief monograph to the public for the reading and consideration of all classes.

While engaged in the writing the thought was to extend the work so as to include a more complete history of the education of the deaf, together with an examination of the alleged merits and demerits of the divergent methods of teaching now most in vogue. Ample notes to that end had also been made, but want of leisure prevented the putting of them into readable shape. Possibly, however, the book as it is may be the more generally acceptable for not entering upon a territory which is much in dispute among the professional teachers of the deaf.

It would be an unjust omission not to mention here what a storehouse of important materials for the examination of this whole subject in all its relations has been found in the thirty or more volumes of the *American Annals of the Deaf and Dumb*. From these valuable volumes, together with the Reports of institutions and conventions, and various publications in this and

other countries relating to the deaf, much has been drawn for the presentations here made.

The Author has only to add that if this little book should be so favored as to deepen interest in the deaf and their education, or become in any degree influential in diminishing the sources of the sad misfortune of deafness and other like afflictions from the same causes, he will consider himself abundantly compensated for the time and labor employed in the preparation of it.

PHILADELPHIA, July 4, 1887.

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# THE CHILDREN OF SILENCE.

Who made man's mouth? or who maketh the dumb, or the deaf, or the seeing, or the blind? have not I the Lord?—Ex. 4: 11.

FOR whatever ends the Almighty Ruler of the universe, in His government of this world, ordains or permits it, every generation brings forth numbers of our race to whom life is a scene of unbroken silence or perpetual darkness.

These are the Deaf and the Blind.

The relative proportions of these two classes are not accurately known, nor are they the same in all sections of the world. Flat, open, dry, and warm regions, like Egypt, seem to have the most blind; mountainous, damp, enclosed, and cold regions, like Switzerland, seem to produce the most deaf. In general average the two classes are supposed to be nearly equal.

It belongs to governments, municipalities, communities, and all right-feeling people to

bestow humane and benevolent consideration upon both these classes of unfortunates, that their privations may be made as light as possible. More would perhaps be done for them if more were known about them. Ready information is certainly not easily accessible. The deaf are more out of notice than the blind, and their case, though the more pitiable, is the least understood. More popular books on the subject would be a public good and a deserved mercy to those whom the course of things has placed under these disabilities.

To that class of our fellow-men commonly called *deaf-mutes* or *the deaf and dumb* it is proposed to devote these pages.

## Who are Deaf-Mutes?

There is some defect in the popular terminology on the subject. Those usually called deaf-mutes, deaf and dumb, Taubstummen, sourds-muets, and placed in special schools called institutions for the deaf and dumb, colleges for deaf-mutes, and the like, are not all, literally, what they are called. There is a discrepancy between these names and the facts, both as to the

deafness and the muteness—a discrepancy which is also daily widening in one direction or another.

A deaf-mute, literally, is one who has no sense of hearing and no power of speech. But this is far from being the truth with regard to all who pass under the name of deaf and dumb and as we find them in institutions for the deaf and dumb. Several classes are included to whom these names do not apply. As they first come to these schools most of them may be destitute of the power of hearing and of ability to use articulate speech; but these constitute but one class along with other classes.

Perhaps one-twentieth of those called deaf-mutes retain something of hearing and speech, whilst about an equal number retain something of speech, though become totally deaf since learning it. About one third (16 out of 54, according to report of 1872) of the pupils in what is called the National Deaf-Mute College at Washington belong to one or the other of the classes having some hearing or some power of speech, and hence are improperly called deaf-mutes. The profession devoted to the instruc-

tion of the deaf has been brought to feel this, as well as the importance of what remains to such persons over and above the case of real deaf-mutes, and so has accepted the somewhat vague and unclassic term of *semi-mutes* to designate those who retain some speech, whether totally deaf or not. This is something toward a clearer idea in the case, but still not up to the precise facts.

Dr. E. M. Gallaudet (in *International Review*) comes fully to the realities when he says: "The class [usually called deaf-mutes] should always be spoken of as the DEAF. The term *deaf-mute* should only be applied to such as are totally deaf and completely dumb. Besides this sub-class, we should then have the speaking deaf, the semi-speaking deaf, the speaking semi-deaf, and the mute semi-deaf."

This discrimination is perfectly just in itself, and of great practical worth when it comes to the question of methods and provisions for the education of these several classes.

As the whole subject of the instruction of the deaf was dealt with in this country for the first half century of these endeavors, these discrimi-

nations did not so much matter. All were treated as deaf-mutes; and if they were not literally such at the beginning, they were mostly made such by the time they were through with their schooling. But the progress of knowledge and experiment in these departments, the changes of conviction that have been wrought, and the best interests of those meant to be benefited by these benevolent endeavors have reached a point to demand a rearrangement of the common nomenclature hitherto prevailing, along with adequate corresponding provisions for the different phases of the situation.

No one can penetrate far into the discussions and debates that have arisen without being sadly convinced that there has been quite too much unfitting conglomeration of things widely differential, leading to serious misapprehensions, false arguments, and damaging wrongs, calling loudly for a remedy.

Deafness and muteness are things essentially different, and so largely separable as to require some sort of divorce between them in nomenclature to conform it to truth. One may be totally deaf and yet not be mute, or mute and not be

deaf at all. All children are born mute, but they are not therefore born deaf. Muteness may be a result of deafness, but may also be the result of idiocy, malformations, paralysis, mutilations, and other causes, where there is no lack of hearing power.* There may also be congenital and total deafness, and all the organs of speech and the use of speech still be present. Educational efforts, ancient and modern, as well as physiology, abundantly demonstrate that it is a vulgar mistake to confound the absence of speech in the deaf with the organic disability of deafness. The deafness may be a great hindrance to the acquirement and use of speech, but the muteness which naturally accompanies it is not in itself a disease or physical incapacity, like blindness or deafness. If long neglected, the organs of speech may become rigid, or waste away and become incapable of performing their office, and the causes producing deafness may in some few cases operate so as to disable articulation also; but in the vast

* The census for Ireland in 1861 reported 723 "dumb not deaf"—from paralysis, 96; from idiocy, 270; from paralysis and idiocy, 92; and 265 "dumb without any other defect."

majority of instances there is no foregone necessity, even in congenital deafness, to render the use of articulate speech impossible.

In all ordinary cases the whole machinery for vocalization, mental and physical, is present in the deaf the same as in those who hear. Though not called into exercise and not tutored to perform its functions, it still is there, and also capable of utilization under proper instruction and practice.

As a matter of fact, many deaf do use their vocal organs in articulate speech. Some who have never heard a word still successfully use words. Those who have never heard sound, if left to themselves of course never imitate definite sounds—not, however, because they are wanting in natural furniture for it, but because no idea of it has ever been communicated to their minds. If any means can be devised to convey to them the idea of spoken words, and of the use of the vocal apparatus to produce or form them, there is nothing present or absent in their organs of speech to prevent their use of articulate language. Though *deaf*, they are not always nor necessarily *dumb*. Indeed, it is now

admitted on all hands by those competent to speak on the subject that at least one-fifth of those who go under the name of deaf-mutes are capable of being taught to speak, whilst others, equally competent to judge in the case, assert and maintain that at least four-fifths, if not ninety-nine hundredths, not otherwise deficient, can be successfully taught to talk.

It is therefore a piece of great absurdity in nomenclature, and the perpetuation of a mischievous falsehood in popular apprehension, to persist in linking deafness and dumbness together as one and the same thing, or as necessarily consociated, by designating the whole class of pupils in the institutions for the deaf as *deaf-mutes* or *deaf and dumb*. In reality, they are simply THE DEAF, or those whose power of hearing is so deficient that they are rendered thereby the proper subjects for special methods of instruction which do not obtain for the education of children who have their hearing unimpaired. The muteness or non-muteness, present or prospective, in the several individual cases is quite another matter, and is not necessarily and permanently determined by the absence or presence

of the power of hearing. The deafness, the deficiency and disability in auditory power, is the great characteristic thing marking the entire class in question, *and this alone;* and to this one thing should the general designation of them be confined. The muteness marks a sub-class only; and to put it into the general designation of the entire class, as co-ordinate with the deafness, is as unphilosophic as it is untrue.

Still, the reference is not to all classes of persons who may be hard of hearing—not to such as have become deaf with old age or lost hearing toward or after middle life; but only to those defective in auditory power from infancy or who became deaf prior to entrance upon adult life, and by reason of their deafness are deprived of the privileges of education in the schools for hearing children. Some of these have been born partially or totally deaf. Others have partially or totally lost hearing before learning to use speech. Others have partially or totally lost auditory power subsequent to the acquirement of spoken language, but before commencing or completing their education. Some of them, whether partially or totally deaf, have more or

less use of speech, and are not mutes. Others are mute simply because no right efforts have been made to teach them speech. And some, though having a partial command of speech, are rendered mute by being classed and treated as mutes preordained never to use articulate speech.

### Are the Deaf Numerous?

In the absence of ascertained statistics few persons would suspect the extent of the infirmity of which these pages treat. Indeed, it has been only since the establishment of public institutions for the deaf, and through the earnest activities of the benevolent and able men concerned in them, that the real facts began to be revealed.

The Hartford institution was the first created in the United States. It was begun in 1817. Prior to that almost nothing was known of the number of the deaf.

When Dr. Mason F. Cogswell was anxiously looking about with a view to secure an education for his daughter Alice, who had lost her hearing by spotted fever in the early part of her

third year, he unexpectedly discovered that there were several deaf and dumb youths in the State of Connecticut, in which he resided. From this he was led to think that there might possibly be enough such in the country to form a school of some size. Even this was thought to be extravagant by men whom he consulted. No one could recollect having met more than one or two deaf-mutes in all their lives. But when replies came in from the Congregationalist clergy of Connecticut, to whom he had addressed a circular on the subject, he found that there were eighty deaf-mutes in that State. It was this discovery that led to the establishment of the Hartford Institution for the Deaf.

In 1803, Francis Green, wishing to see a school for the deaf established in Massachusetts, addressed a circular to the respective ministers of every religious society in that State asking for the name, sex, age, and residence of each deaf and dumb person that might be known to them. The answers returned showed that there were about seventy deaf-mutes in Massachusetts at that time, many of them proper subjects for school instruction. From this it was estimated

that there were perhaps about five hundred such then in the United States.

In 1815, when an association in Hartford determined to send Rev. T. Gallaudet to Europe to qualify himself to become a teacher of the deaf, taking Connecticut as a standard of estimate it was believed that New England contained four hundred persons in this unhappy situation, and that the United States embraced upward of two thousand.

### CENSUS REPORTS OF THE UNITED STATES.

Up to 1850 no thoroughly reliable returns of the number of deaf in the United States had yet been made, the census of 1840 being notoriously defective and purposely perverted on this point.

At the first convention of American instructors of the deaf, which was held in New York City August, 1850, resolutions were adopted with reference to the census returns, referring to the great imperfections in them as respected the deaf, making special appeal to the Government officers and the friends of humanity throughout the country to have faithful and diligent inquiry made to ascertain the exact number of deaf and

dumb persons in this country, and directing the presentation of a petition to the Secretary of the Interior setting forth the importance and value of definite information on the subject, and designating the particulars as to which inquiries and returns should be made. Since that time the statistics of the deaf in the United States have been gradually approximating a more satisfactory and reliable condition. The superintendent of the seventh census (1850) promptly and cordially assented to the requests of the convention, and endeavored to put its suggestions in force. The result, though not all that was desirable, gave evidence that there were then in the United States not less than 10,103 so-called deaf and dumb persons—1 for every 2300 of the entire population, and of the white population separately 1 in about every 2100, deafness, as reported, being much less frequent among the colored than among the white people.

In analyzing and comparing the several features of these returns, Dr. Harvey P. Peet was clearly of the opinion that they did not include all of this disabled class, and that perhaps one-half or more of the deaf under ten years of age

were unrecognized or overlooked in the census of 1850.*

The census reports of 1860 gave the number of deaf-mutes in the United States as 12,821—1 in about every 2400 of the entire population. But it is known that these returns fell far below the actual facts. Mr. Noyes, superintendent of the Minnesota institution, said that he had reason to believe that as many as one-third of the deaf and dumb in that State under ten years of age were not returned, and that many cases of semi-deaf and semi-mute, who for educational purposes are to be classed with the deaf and dumb, were not included in the official returns. Mr. McWhorter of the Louisiana institution made the same complaints with regard to the returns in that State. The official reports gave the number of deaf-mutes in Massachusetts as 427; the State census of five years later gave the number as 561, and the secretary of the Board of Public Charities, Mr. Sanborn, was convinced that, including children under five years of age, the number was 950, and perhaps 1000, in that State, showing the U. S. returns at least

* *Am. Annals*, v. 14; xvii. 61.

one-half below the actual facts. And the Census Office itself, in correction of the returns, estimated that there was at that time in the country not less than 1 deaf-mute to every 1500 of the population.

The census of 1870 gave the number of deaf-mutes in the country as 16,205—about 1 to every 2380 inhabitants. But the ninth annual report of the Board of Charities of Massachusetts justly remarks on this that "if the proportion estimated by the census report of 1860 held good for 1870, the actual number of deaf-mutes in the United States at the latter date must have exceeded 25,000." In Massachusetts it was definitely ascertained, the names being registered, that there were 1100 deaf-mutes in that State, more than twice as many as were returned in the United States census of 1870. Out of a list of deaf-mutes in Virginia in the possession of Mr. McCoy, giving the names of 75, only 13 (less than one-fifth) appear on the U. S. census returns; of 32 known to Mr. McWhorter of Louisiana, only 3 were enumerated in the official returns; and of 294 pupils in attendance at the Illinois institution during the year

following the census of 1870, Dr. Gillett says only 97 were given in the census returns. The census of 1870 reports 55 deaf-mutes for Nebraska, but Mr. Kinney states that the institution of which he is principal had a list of deaf-mutes in that State numbering more than 100 names.

In whatever way these defects in the official returns may be accounted for, these ascertained instances—doubtless only samples of what had occurred in general—amply prove that the number of so-called deaf-mutes in the United States in 1870 was truly estimated at not less than 25,000.

The census of 1880 has not yet, at the time of this writing, been officially announced. Mr. Edward A. Fay of the Deaf-Mute College in Washington has, however, been in the Census Office examining the important work carried on under the direction of Mr. F. H. Wines, who has charge of the report relating to the deaf and blind, and states that "the statistics of the tenth census are much fuller with respect to these classes than those of any previous census. As the collation of the returns is not yet

complete (March, 1882) the office is unwilling to furnish any figures for publication at present; but we venture to inform our readers (of the *Am. Annals*) that *the total number of the deaf and dumb of the United States, shown by this census, will be about 35,000, which is considerably more than double that of the last census*—not, of course, because there has been any such increase in the actual number, but because the present census is so much more accurate."

Assuming the gross population of the United States to be about fifty millions, this would show 1 deaf-mute to every 1429 inhabitants. This is perhaps as near as it is possible to come to general accuracy in so difficult and complicated a matter, and clearly shows how much too low the proportion of this class of the afflicted was in all the preceding official returns.

What an army of deaf persons thus stands before us!

Since the preceding was written a complete and thoroughly digested statement of the results obtained by the last census respecting the number and condition of the deaf in the United

States has been published by Mr. F. H. Wines, the expert and special agent of the tenth census for the defective, dependent, and delinquent classes. As this gives the fullest and most recent information on the subject, we here quote it entire as published in the *Am. Annals*, vol. xix. pp. 326, 327:

"The total number of deaf and dumb found was 33,878; of whom 32,806 were returned by enumerators and 1072 additional by physicians. They were found in the following places: 5393 in institutions for the deaf; 511 in almshouses; 4 in jails and other prisons; 79 in benevolent institutions; 24 in hospitals and asylums for the insane; and 27,867 at their homes or in private families.

"With respect to their ages, 1437 were under six years old; 10,046 between six and sixteen; 5013 over sixteen and under twenty-one; and 17,382 were twenty-one years old and over. Taking from six to twenty as of proper school-age, the number of school-age was 15,059. The number as reported in institutions, June 1, 1880, was, as stated, 5393; but in addition to these were found 6761 not in institutions who had

received special instruction in institutions, or 12,154 educated or partly-educated deaf-mutes in all. This number is doubtless incomplete.

"The age at which deafness occurred was stated in 22,473 cases. Of these, 12,155 were congenitally deaf; 7289 lost their hearing under five years of age; 2235, from five to nine; 694, from ten to fourteen; and 100 at fifteen years.

"The cause of deafness was assigned, with more or less definiteness and probability, in 9209 cases, of which 366 were referred to diseases of the ear, 8250 to other diseases, and 593 to accidents. The list of causes accepted and tallied is as follows: Meningitis, 2856; scarlet fever, 2695; malarial and typhoid fevers, 571; measles, 448; fevers non-malarial, 381; catarrh and catarrhal fevers, 324; other inflammations of the air-passages, 142; falls, 323; abscesses, 281; whooping cough, 195; nervous affections, 170; scrofula, 131; quinine, 78; blows and contusions, 74; inflammations of the ear, 72; diphtheria, 70; hydrocephalus, 63; teething, 54; mumps, 51; small-pox and variola, 47; erysipelas, 36; fright, 32; water in the ear, 25; sunstroke, 21; noises and concussions, 21; tu-

mors, 11; chicken-pox, 10; struck by lightning, 10; foreign bodies in the ear, 9; salt rheum, 3; malformation of the ear, 2; syphilis, 2; consumption, 1. We rejected 850 cases of disease and 128 of accidents as too vague or improbable to be counted or classified.

"Among the complications of deafness were found: Deaf, dumb, and blind, 245; deaf, dumb, and insane, 268; deaf, dumb, and idiotic, 2122; deaf, dumb, insane, and blind, 30; deaf, dumb, blind, and idiotic, 217. Total number of deaf who are doubly or trebly afflicted, 2882.

"The number of deaf found in the principal cities was: In New York, 718; Philadelphia, 464; Brooklyn, 246; Baltimore, 169; Cincinnati, 136; San Francisco, 76; and New Orleans, 109.

"The classification by sex, race, and nativity is as follows: Native white males, 14,879; females, 12,425; total, 27,304. Foreign white males, 1894; females, 1423; total, 3217. The total males are 18,567, and females 15,311.

"The increase in the number of deaf-mutes in half a century, as reported, has been: In 1830 there were 6106; in 1840 there were 7665;

in 1850 there were 9803; in 1860 there were 16,205; and in 1880 there were 33,878 returned. But no close approximation to a complete enumeration has before been made.

"Compared with the other three groups of defectives, the deaf and dumb number 33,878; the blind, 48,928; the idiotic, 76,895; and the insane, 91,959. But the blind of school-age number only 7768 against 15,059 deaf children of corresponding age."

### CANADA.

The returns of the census of 1870 in Canada, according to Mr. A. H. Abell, show a population of deaf in that country numbering 3789, or 1 to every 938 of the inhabitants. Ontario showed the smallest proportion, the total number in that province being 1412, or 1 to every 1148 inhabitants. Quebec had 1630 deaf, or 1 to every 731 inhabitants.

Mr. McGann of the Ontario institution thinks the returns for Ontario a little in excess of the facts, as speechless paralytics and idiots were included under the rubric "Deaf and Dumb Persons." He gives what he thinks the true

proportion in that province as 1 in every 1550 of the population.

### THE LOWER PROVINCES OF BRITISH AMERICA.

Mr. G. Scott Hutton of Halifax, Nova Scotia, with much industry and intelligence collected the statistics of the deaf and blind in the Lower Provinces of British North America, and gave the results of his endeavors in the *American Annals*, vol. xiv. From these presentations the following figures are given for the year 1861:

In Nova Scotia the number of deaf was 295 —1 in every 1122 of the inhabitants.

In the province of New Brunswick there were 166 deaf—1 in every 1518 of the population.

In Prince Edward Island there were 68 deaf —1 in every 1189 of the population.

For New Foundland the statements are from the census of 1857. The number of deaf at that time is set down as 111, or 1 in every 1100 of the population.

The combined totals in these Lower Provinces are given for 1861 as 665, or 1 in every 1182 of the population; and the same for 1869 as 763,

an average of 1 for every 1206 of the aggregate population.

"Thus," Mr. Hutton adds, "within the bounds of the British Maritime Provinces we have a population rising *one million*, containing nearly *eight hundred deaf-mutes*, being, in round numbers, 1 in every 1200 of the population."

### GREAT BRITAIN.

The census returns for the United Kingdom of Great Britain, including England, Wales, Scotland, Ireland, and the Islands of the British Seas, as given by Dr. David Buxton, cover three separate reports. The numbers of deaf reported are as follows:

In 1851, total, 17,300—1 in 1590 of population.
In 1861, " 19,588—1 in 1432 of population.
In 1871, " 19,237—1 in 1644 of population.

These statistics would show a considerable decrease in the instances of deafness in proportion to population from 1861 to 1871. Much is made of this by some writers on the subject. Dr. Buxton thinks it may be regarded as "the consequence of direct sanitary improvements,

general attention to the laws of health, a more skilful treatment of the diseases which result in deafness, and the avoidance of consanguineous marriages."

But it is not safe to lay much stress on this apparent diminution. From 1851 to 1861 the figures show a large increase in the proportion of cases of deafness, and when the returns for 1881 come in it is quite as likely that the favorable reports of 1871 will be shown to have been defective. The census returns upon this difficult point are generally so inaccurate and doubtful that, in the very nature of the case, more than the simple exhibit of one inquiry is necessary to furnish a solid foundation on which to begin to reason with confidence. It is to be hoped that the seeming diminution in proportion to population may prove correct; but to accept it as certain to the extent indicated is more than is warranted by the data at hand. 1 to every 1500 of the general population would show improvement, and, judging from general analogies, that would seem to be a safer acceptation.

### THE KINGDOM OF BELGIUM.

Mr. Daniel C. Gilman furnished to the *American Annals*, vol. viii., a full table of the deaf and blind in the nine provinces into which Belgium is divided, as derived from *Exposé de la Situation du Royaume de la Belgique, publié par le Ministre de l'Intérieur*, Bruxelles, 1852.

The figures in these tables foot up in totals showing the number of deaf in that kingdom in 1850–51 to be 1911—1 in every 2316 of the general population—but perhaps a little short of the actual facts.

### THE KINGDOM OF PRUSSIA.

The same writer gives the statistics of the deaf and blind in Prussia, mostly taken from the *Preussischer Schulkalendar* for 1855.

In 1846 he says there were 11,799 deaf-mutes in the kingdom—1 to every 1357 of the population. In 1849 the number of deaf was 11,973—1 for every 1364 inhabitants. As to how the account may stand since the formation of the empire no statement is at hand. Dr. H. P. Peet in 1852 stated that Prussia had 1 deaf-

mute in every 1550 souls, and that this was about the average in Germany apart from Switzerland and Baden, the reports varying from 1 in every 1240 souls in Würtemberg to 1 in 2180 in Saxony. On what authorities he relied for these figures is not indicated. Dr. Buxton gives the figures as first above stated. Hutton in his elaborate tables gives the number of deaf in Würtemberg as 1 in every 901 souls; in Saxony, 1 in every 1629 souls; in Bavaria, 1 in every 1774 souls; in Hesse-Darmstadt, 1 in every 829 souls; and in Prussia, 1 in every 1344 souls. These figures would show for Prussia and Germany a much larger proportion of deaf, on an average, than that stated by Dr. Peet. Hutton quotes from Sir Wylde's statistics.

### FRANCE.

According to an official census of the population published by the Minister of the Interior by a decree of May 10, 1852, the number of deaf in France was then 29,512—1 to every 1212 of the population. This is the general average. The proportions vary greatly in the several departments, from 1 in every 686 and

1 in every 691 in Corsica and the Upper Rhine, to 1 in 2515 in the department of the Lower Seine.

SWEDEN.

The *Encyclopædia Britannica* quotes the number of deaf in Sweden in 1840 as 1999—1 in every 1528 of population. Later accounts would naturally be more reliable, but they are not at hand.

NORWAY.

The same authority quotes the number of deaf in Norway in 1835 as 1091—1 in every 977 of population. The absence of later returns is to be regretted.

DENMARK.

The same gives the number of deaf in Denmark in 1834 as 630—1 in every 1942 of population; which is evidently far below the truth. Dr. E. M. Gallaudet credits Denmark with "about 2000" deaf—1 in about every 900 of population; which may be a little in excess, being based on estimates rather than upon ascertained figures.

### HOLLAND.

Hutton, from Sir W. Wylde's statistics, assigns to Holland 1989 deaf—1 in every 2277 of population. The *Encyclopædia Britannica* quotes reports of 1833, which made the proportion at that time 1 in every 2000. The probabilities are that both these accounts are below the actual facts.

### SWITZERLAND.

Hutton credits to Piedmont 8948 deaf—1 to every 563 of population; to Savoy, 1224—1 to every 443 souls; to Berne, 995—1 to every 206 souls; to Argovia (Vaudois Alps), 960—1 to every 189 souls. These are startling exhibits, but their general correctness is confirmed from all sources of information. Switzerland is the country of deafness. Dr. Peet says it contains "nearly 1 deaf-mute in every 200 souls."

The duchy of Baden and Sardinia are also unusually populous in deaf.

Repulsive and sickening as the contemplation of these statistical details may be, they are fraught with important information which legislators, educationists, and people in general

need to know. They are necessary to the answer of the question whether the sufferers from the infirmity of deafness are numerous. And only by such comparison of particulars in all sorts of regions and communities can a firm basis be found for a proper general estimate.

And from this wide survey the conclusion follows that of all persons born into our world, *at least 1 in every 1500, on an average, is either born without hearing or loses hearing, totally or virtually, before reaching the years of mature life.*

At this rate there are now on earth about one million of this class!

## The Causes of Deafness.

The deaf are of two classes, mostly quite widely distinguishable from each other.

The one class consists of the *congenital deaf*, those who bring their deafness with them into the world. The other class consists of the *adventitious deaf*, those who once possessed hearing, but became deaf by disease or accident before reaching adult life or receiving an education.

In the nature of the case *congenital* deafness must have causes largely differing from the causes of *acquired* deafness. The same may betimes be influential in those cases of adventitious deafness in which the loss of hearing has its origin in constitutional weakness or taint or in some prenatal occurrences; but in general it is otherwise.

In all cases the difficulty, of course, is with the very complex and intricate physical apparatus called the *ear*, both being similarly affected.

It is difficult to give or get an easy comprehension of this elaborate instrument, made up of cartilages, cavities, membranes, bones, hinges, levers, muscles, cells, glands, cords, joinings, canals, liquids, and nerves. There are, indeed, three ears in one—*the outward ear*, with its auditory canal leading in to the polished drumhead, beyond which all is naturally invisible; *the middle ear*, or air-cavity of the drum, with its tubes running down to the back part of the upper throat, its bridge of bony levers, its muscles to set them, its nerves connecting with the face and the tongue, and its openings into the mas-

toid cells; and *the inner ear*, with its vestibule and openings by which it is joined to the middle ear and connected with the brain, its cochlea or snail-shell at one end and its three half-circles of canals at the other, its bony outward boxing and its inward membranous lining, its thousand-corded nerve-connections and liquid lake by which all is filled and floated,—well named *the labyrinth*, each part thereof embracing a world in itself, and the whole in combinations beyond human power to trace completely.

In either of these departments troubles may readily come to render the whole apparatus useless for its purposes.

The external auricle may be damaged by frosts, by blows, by skin diseases, by the thrusting in of foreign bodies, by insects, by improper syringing, and by boils and tumors, so that hearing power is destroyed; or the drumhead may be effectually damaged by perforations, ruptures, inflammations, fungi, and ulcers.

The middle ear or drum-cavity is liable to various inflammations, the mucus and pus arising from which may distend the drumhead and burst it; chronic running from the ear, if not

arrested, puts both hearing and life in jeopardy; polypus may be formed, the growth of which may affect the bone and waste away the hearing organs; the Eustachian tubes may become diseased or closed, the drumhead fall in, the chain of lever bones may be sloughed out or hindered in their motions, and deafness intervene as the result.

The damages to which the inner ear or labyrinth is liable so as to disable its functions are so hidden that science has been much at a loss to describe them. But there is possibility of the lymph being run out or dried up, of disarrangements from concussions, of deteriorations and consequent disabilities of the auditory nerve, of diseases in the semicircular canals, and of participations of this important part of the auditory apparatus in various constitutional and other diseases from which it never recovers.

In all such cases deafness, partial or total, may be the result. And whatever produces or tends to produce, mechanically or otherwise, any destruction, derangement, deterioration, or inactivity in any part of the hearing apparatus, is a cause of deafness.

It is much easier, however, to trace the causes of adventitious than congenital deafness, though the precise difficulty is often very hard to determine in any case. What Sibscota said is plainly evident, that "hearing, of all senses, is the soonest prejudiced."

### Causes of Congenital Deafness.

Life before birth introduces to a very mysterious world, about which we have very meagre information. In that hidden period of formation through which every one has passed a thousand subtle influences may interfere to shape results which exhibit themselves in inability to hear.

A glance at the teachings of physiology touching the formation and development of the machinery of hearing reveals how readily the slighest disturbance of Nature's processes may serve to render her efforts unsuccessful.

"The labyrinth of the ear shows itself first as a little protuberance on the side of the extended marrow; its roundish form passes by degrees into the pear-shape; it forms itself into a capsule which becomes a gristle, and later on is ossified;

the interior becomes the cuticular labyrinth, and the extending style becomes the auditory nerve. The arched passages are added later, and are divided into cuticular, cartilaginous, and osseous. After that the filaments spring out into the labyrinth-water, and then, with the development of the cochlea, the pyramidal figure of the ear is perfected; whilst another system of development is at work producing the cavity of the tympanum, the Eustachian tube, and the small bones of the ear, as also the external ear."

In a process so delicate, so complicated, so long continued, so dependent on concurrent accuracy from diverse centres of operation, we can readily see how locality, climate, mode of living, constitutional tendency, or abnormal impulses here or there may effectually pervert or defeat the intention, rendering it a very wonder that the failures are so few.

Examinations of deaf persons after death have shown that often the auditory nerve fails to extend entirely through the hard bone, or is in a state of degeneration and deadness; that sometimes the water of the labyrinth is wanting; that in some the middle ear is filled with

chalky or fungous or gelatinous matter, or the Eustachian tubes closed or destroyed; and that in others secretions are suppressed, glands diseased, or one part or another of the normal structure misformed or absent; and so all hearing was prevented.

Such conditions have been found by dissection after death, but are mostly beyond the diagnosis of physicians during life. And still more beyond the power of man is it to tell just when, where, and how these particular difficulties originated so as to produce congenital deafness. And yet the progress of knowledge and observation has served to reveal some predisposing causes which are fruitful in the production of this sad defect. Prominent among these is

### THE INTERMARRIAGE OF RELATIVES.

Consanguinity of parents is unfavorable to offspring. Unions of blood-relations tend to sterility, and, when productive, to all varieties of weakness in children born of them. This has been disputed, but not on such data as to set aside the great accumulation of facts to prove the strong tendency of consanguineous marriages

to produce idiotic, weak-minded, deformed, feeble, blind, and deaf progeny.

The earliest advocate of the education of deaf-mutes in America, Francis Green, married a double cousin—his father and his wife's father were brothers and married two sisters—and his son Charles was deaf, whilst three others of his children were feeble and died in early childhood.

J. Scott Hutton, principal of the School for the Deaf in Halifax, Nova Scotia, gives a summary of cases in that institution, and states that "out of 81 families connected with the school since its commencement, *more than one-fourth of the parents have been related* in various degrees of consanguinity. In 23 families where the parents were related there were 56 deaf children. In one family containing 5 deaf, where the parents were second cousins, the great-grandmothers were sisters and the grandmothers cousins, while in another branch of the same family all the boys were hopeless cripples. In another family, where there are 2 deaf, besides a brother and a sister partially deaf, the grandparents were cousins. Another cousin-marriage

gives 3 deaf children, 2 of whom are imbecile and 1 idiotic; another still, 4 deaf, 1 almost blind, and the rest with defective sight—a misfortune under which the father also labors. In another instance the father was partially deaf. In another family there was 1 partially deaf and 2 imbecile. Out of 110 deaf children of whom we have definite information, 56, or fully *one-half, are the offspring of cousins;* and further inquiry would probably show a still larger proportion."*

In 59 cases of deafness reported by the Illinois institution in 1873, the parents of 42 were first cousins; of 9, second cousins; of 5, third cousins; of 2, fourth cousins; and of 1, uncle and niece.

Dr. Dudley Peet, in an article written for the medical profession on "The Remote and Proximate Causes of Deafness," writes: "Of all known causes, intermarriage is the most prolific cause of predisposition to deafness. It has been settled beyond a shadow of doubt that intermarriages of first cousins, and even some of second cousins, give rise to offspring which are generally either of small size, imperfect health, or imperfect

* *Am. Annals*, xiv. 15, 16.

development in some part; they are either idiots, blind, club-footed, or deaf. Those offspring of first cousins who are not are rather the exception than the rule."*

In Rev. B. Talbot's *Notes of the Iowa Institution for the Deaf*, 1870, he records one family of 6 children in which 3 were born deaf, and a fourth lost hearing at three years old—parents first cousins; another family of 10 children, 3 of which were born deaf, and 2 of whom lost hearing at an early age—grandmothers were first cousins; parents, second cousins; and 15 other deaf children whose parents were blood-relatives.

In a note of 65 families yielding 67 deaf pupils to the Pennsylvania institution for 1871, in 2 cases the parents were first cousins; in 3, second cousins; in one of the latter 4 out of a family of 13 children were deaf.

Henry Winter Syle, in an account of the *Summary of Recorded Researches* on the subject, says: "The most obvious and incontestable causes of congenital deafness are the intermarriages of near relations. Intermarriage in-

* *Am. Annals*, viii. 132, 133.

creases the chances of deafness [in offspring] two to three."*

W. S. Smith, principal of the Oregon institution, writes that the scarcity of girls in that Territory twenty years ago caused many young men to marry their cousins, the ill fruits of which unions appear in the large number of deaf children. Eight pairs of cousins personally known to himself have 16 deaf children: two have 3 deaf children each, 1 being also insane; three have 2 deaf children each; and four have 1 each. One of the last named has also 1 child blind, and another a child that is a cripple.†

Rev. Samuel Smith, chaplain of the London Association in Aid of the Deaf, in a letter to the London *Times*, Feb. 19, 1875, mentions the following instances out of many known to himself personally in which parents were first cousins: "In one family, that of a workingman, out of 9 children, 8 were deaf, and moreover of such weak constitution that the three youngest (born singly) could not walk. In another, a clergyman's, out of 8 children, 4 were

* *Am. Annals*, xviii. 139. † *Ibid.*, xix. 127.



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afflicted—1 being deaf, with imperfect sight; another, deaf and blind; the 2 others, deaf and idiotic. In a third there are 4 deaf children. In a fourth, 2 out of 4 cannot hear. In a fifth, 3 children are deaf, with imperfect sight."

M. E. Dally, in a series of articles published in the *Gazette hébdomadaire de Médecine et de Chirurgie*, vol. ix., concedes that about 5 per cent. of the marriages in France are consanguineous, and that from 5 to 11 in every 100 cases of congenital deafness come from these marriages.

In the report of the Pennsylvania institution for 1884 there is given the result of a special investigation respecting the pupils who left that institution during the ten years prior to 1884. Out of 497 cases concerning whom information was sought, replies of a reliable character were received covering 344 cases. Of these, 28 were the children of 16 couples related in blood—9 first cousins and 7 second cousins. Of these 28 deaf children, 22, or more than 78 per cent., were born deaf—a proportion of 45 per cent. more than where no such blood-relationship existed. And, comparing the average num-

ber of congenitally deaf children to each family, it was found that there were four times as many per family of related hearing parentage as per family of unrelated hearing parentage.

Dr. David Buxton, who had superior facilities for knowing or ascertaining the facts in the British Islands, in a paper published in the *Liverpool Medico-Chirurgical Journal*, says: "As regards the marriage of blood-relations, there can be no question now as to the great influence which this cause exercises in the production of congenital deafness, as well as of almost every other physical and mental defect. In an inquiry which I have made from a large number of persons I found that every tenth case of deafness resulted from the marriage of cousins. The Irish returns make known 170 instances in which the parents were related in the degrees of first, second, or third cousins. In 17 instances there were 3 deaf and dumb children in each; in 3 there were 4; and in 3 there were 6, 7, and 8 deaf-mute children."

Dr. S. M. Bemis of Louisville, Kentucky, in a report to the American Medical Association on "Influences of Marriages of Consanguinity

on Offspring," gives the results of 883 instances of such marriages collected from various quarters in our own country, and with the intention of embracing as far as possible those in which the results were favorable as well as unfavorable. Of these 883 consanguineous marriages, the number of offspring was 3942: 1134 of them were defective in one way or another; 145 were deaf and dumb; 85 were blind; 308 were idiotic; 38 were insane; 60 were epileptic; 300 were scrofulous; 98 were deformed; and 883 died young.

Dr. Bemis adds: "I have made great effort to ascertain the probable proportion of the deaf and dumb, blind, idiotic, and insane in our asylums who are the descendants of blood-intermarriages. This effort has not been successful, from the difficulty principals of such institutions find in gaining the requisite facts. Parents are frequently sensitive on this point; and it is a delicate matter for principals to attempt investigations which the friends of the beneficiaries suppose to be unauthorized by the regulations of the various institutions. I feel satisfied, however, that my researches give me

authority to assume that *over 10 per cent. of the deaf and dumb*, and over 5 per cent. of the blind, and near 15 per cent. of the idiotic, in our State institutions for subjects of those defects, and throughout the country at large, are the offspring of kindred parents or of parents themselves the descendants of blood-intermarriages. The principal of an institution for deaf-mutes communicates the following statement:

"'Of 183 cases of congenital deaf-dumbness, 28 were known to be the offspring of blood-relations. My inquiries have not extended to more than half of the 183. My impression is, that of those born deaf *at least one-fourth* are the children of cousins. It is very difficult to get reliable information. One man in this State denied that he had married a blood-relation: I have since learned that he and his wife were first cousins, and have six children, three of whom are deaf and dumb.'

"The principal of another deaf and dumb asylum writes: 'We recently received four sisters, the children of parents who were own cousins. They were all the children they had.

The farther I extend my inquiries, the greater proportion of deaf-mutes I find who are the children of near relatives: I have no doubt that *at least 10 per cent.* are the offspring of persons so related.'"

M. Ménière, physician to the Imperial Institution of Paris, in a paper before the Academy of Medicine in that city testifies that "marriages between near relatives are never more frequently met with than in the localities where deaf-mutes are born in the greatest numbers, as in some of the valleys of Switzerland, where the inhabitants are almost shut out from communication with the neighboring countries, and present all the conditions favorable to these alliances among relatives."

T. A. Welsh of the institution at Namur, Belgium, in commenting upon the report of the Irish Census Commsssioners for 1871, writes: "From an examination of the tables furnished we perceive that 141 cases of congenital deafness resulted from the intermarriage in 85 instances of *first cousins;* 100 in 63 instances of *second cousins;* 48 from 32 instances of *third cousins;* 13 from 7 instances of *fourth cousins;*

and 22 from 7 instances of the intermarriage of *fifth* and *sixth cousins*,—thus giving a total of 324 cases of congenital deaf-dumbness resulting from the intermarriage of blood-relatives, or nearly *one-tenth* of the total-number returned as being deaf and dumb from birth. The subject was again investigated in 1881, and the results ascertained further illustrate and confirm the statements of 1871 respecting the influence of consanguineous marriages in the production of congenital deaf-dumbness."

At the third conference of Principals of American Institutions for the Deaf, Dr. Gillett gave it as his belief that from 15 to 25 per cent. of all the blindness, deafness, and idiocy in the world is the result of consanguineous marriages. The statistics of his institution showed as large a proportion as this with regard to deafness. Dr. Palmer of the Ontario institution said that the facts with them are that the proportion of deaf children from parents who are cousins is very large—quite as large as Dr. Gillett's estimate.

Dr. Lefevre, in his pamphlet entitled *Les Mariages consanguins*, enters into a very thorough

observation of statistical facts respecting 1235 marriages of relatives, and gives as the result—15 marriages between nieces and uncles, 6 children deaf, imbecile, or idiotic; 460 marriages of first cousins, 19 in every 1000 of the children born deaf, 5 in every 1000 nearly deaf, and 19 in every 1000 imbeciles. In 760 marriages of second cousins there were 31 imbecile children to every 1000 marriages, and 9 imbeciles in every 1000 children. These statistics are for Belgium alone. In Switzerland the instances of deafness are three times more numerous in proportion to population than in Belgium. De Haerne of the Brussels institution, in commenting on these presentations, further adds that the number of deaf in Belgium proceeding from intermarriages of blood-relatives is from twelve to thirteen times greater than the whole number of the deaf in proportion to the entire population.

In the combined reports of the Pennsylvania, Illinois, Georgia, and California institutions for 1877, 45 marriages of first cousins yielded 63 deaf children—49 per 1000; 10 marriages of second cousins, yielded 19 deaf children; and

10 marriages of third and fourth cousins, and 1 of uncle and niece, yielded 14 deaf children.

The Pennsylvania, Clarke, Western Pennsylvania, and Halifax reports for 1878 give 47 cases of consanguine marriages, and among their issue 123 deaf children, 30 families having in them 64 deaf children whose parents are first cousins; and in 53 cases in the Halifax report 46 were born deaf.

In the duchy of Nassau, Mgr. de Haerne has ascertained that the number of deaf among the Jews is in proportion more than double that of the Evangelicals and Roman Catholics; and Dr. R. Liebrich, himself a Jew, ascribes this great excess of Jewish deaf children to the fact that consanguine marriages are more frequent among Jews than other religionists. A corresponding showing with regard to the city of Berlin he explains in the same way.

Such records of the influence of blood-kindred in parents upon their children are simply appalling, whilst there is the still further consideration behind them that the actual facts have not been fully ascertained. And the presentation is all the more horrible when we remember that the

power of prevention is so entirely within the choice and control of those who are the authors of the evil. Considering the blindness, insanity, lunacy, idiocy, and varied defects and weaknesses of mind and body, besides deafness, which are entailed on innocent children from such unions, we should think people would shudder at them and shrink from them as reservoirs of misery, and that every voice would be raised to denounce the abomination, alike at variance with the laws of nature, reason, and divine prohibition.

It is asserted by some that if two related individuals, perfectly healthy in mind and body, join in marriage, there is as much reason to believe that their children will be as sound and healthy as if the uniting parties are not of allied blood. This need not be disputed. Those who make the assertion are still obliged to concede that "the bulk of mankind is imperfectly bred;" that the rarest number of human beings are in all respects sound and free from unfavorable taint or tendency in physical or mental constitution; that where there is weakness, consanguine marriage tends to transmit and intensify it upon offspring, if not to beget it by a weaken-

ing of the activity in the elements of procreation; and that in ninety-nine cases out of a hundred it is practically impossible to tell in advance, with any degree of certainty, who among blood-relatives might marry without detriment to their offspring.

Whether the ill consequences of consanguine marriages upon the children born of them be attributed to the fact of blood-relationship, *per se*, or to some precedent unadaptability of constitution, hereditary taint, latent disease, or unfavorable tendency in one or the other or both of the parties, it does not and cannot alter the one clear and outstanding fact, that such marriages of kin do more surely and more amply develop in their progeny the whole catalogue of human defects and infirmities than would otherwise be the case; and among them a greatly multiplied number of instances of congenital deafness and imbecility.

## Hereditary Transmission.

It is a very firm principle in nature for like to produce like. There is hence a strong tendency of particular qualities and peculiarities

to run in families and to perpetuate themselves from parent to offspring, sometimes modified and sometimes intensified. Hence heredity is necessarily implicated as another predisposing cause of congenital deafness and auditory weakness.

Dr. Nathan Allen has endeavored to formulate an expression of the general physiological principle or law according to which all facts and knowledge of this kind can be classified. "After many years of study, observation, and reflection," he has felt himself prepared to say that perfection of structure and harmony of function is the standard of complete organization in the human subject; and that in proportion to the nearness or remoteness of any given subject to this standard is and will be the perfection of the physical and mental condition transmitted to offspring. A normal and perfect organic structure, where all the functions are performed in a natural and healthy manner,—there a sound and healthy constitution, no accident intervening, will be transmitted; but where one or more of the organs become changed in structure or impaired in discharging their proper functions, the effect, more or less in de-

gree, or the tendency to similar weakness, will be transmitted. This is given as the common law of heredity, and its application can readily be seen in the case before us.

It does not follow that because one or both parents are deaf their children will be deaf, any more than that the children of parents who are blood-relatives will be blind, weak, idiotic, or deaf. There may be such a preponderance of natural vigor, soundness of constitution, and harmony of functions in the parents as to eliminate the effect of the law with regard to the one particular organic defect or weakening of function, so as not to appear at all in their offspring. Everything else may be so favorable that no disadvantage may appear to be transmitted; but the tendency, by reason of the law in all cases, is in the direction of disadvantage and danger to offspring, if not in the first yet in the second or third generation. And this tendency and danger are increased in proportion to the absence of that normal perfection of organization and function which belongs to a thoroughly sound human being, and in proportion to those conditions which weaken the operations of Na-

ture in accomplishing her reproductions. Hence congenital deafness in parents, whether one or both, as any other organic defect, weakness, or predisposition, unless counterbalanced by a very uncommon vigor and perfection of constitution in all other respects, must predispose to corresponding infirmity in offspring. And even in the most favorable instances, in which the first generation may never show any ill-effects from the parental defect, it is almost sure to manifest itself in subsequent posterity beyond what would otherwise be.

Dr. Theo. W. Fishe of the Boston Lunatic Hospital sums up the law in the case in these words: "If the family stock on both sides be sound, healthy, vigorous, free from morbid tendencies, physical or mental, then the resulting offspring will be sound. Otherwise, the family tendencies will be doubled and exaggerated in the children." He further expresses the opinion that "deaf-mutism must follow the general law thus given."

The question, however, can only be settled by a careful gathering of a sufficient number of facts on which to base a conclusive judgment.

In 1855, Dr. Dudley Peet, in the article already referred to, wrote: "There are not sufficient instances known on which to form definite conclusions as to the amount of the hereditary transmission of deafness when one or both of the parents are mutes. There can be no doubt that there is a certain degree of danger. I personally know of only two families, both of the parents in each being mutes, in which there is any direct transmission. *In each family there are seven deaf and dumb children.* I have heard of several other instances."

Rev. W. W. Turner of the American Asylum, writing on the "Causes of Deafness" in 1847, said: "Before the deaf and dumb were educated comparatively few of them married. Of these we know of but two, and they have deaf children. L. S. of Connecticut, born deaf, married a woman who could hear and speak. Of their seven children, *five were born deaf.* N. B. of New Hampshire had a wife who could hear, and had two children, *both of whom were born deaf.*

Judging from marriages of former deaf pupils, some quite recent, he gave it as his opinion that at least one in every twenty of such unions,

even if one of the parties be hearing, may reasonably be expected to produce deaf children.

In the special inquiry of the Pennsylvania institution, published in its report for 1884, 10 deaf children of 6 deaf unrelated couples are noted, 4 of the 10 having been born deaf. The proportion of deaf children born in the families of unrelated hearing parentage is thus shown to be *7 per cent. less* than in those of deaf parentage. The pupils who have gone out from the institution during the ten years prior to 1884 of course have not advanced far in life, and all the results of these young intermarriages cannot yet be told. The report is, that 20 couples have married, 16 known to have been congenitally deaf—that thus far 20 children have been born of these marriages, and that 2 of the 20, or 10 per cent., were born deaf.

Rev. Mr. Turner in 1868, after fuller experience and observation, presented a paper on "Hereditary Deafness" before the National Conference of Principals of Institutions for the Deaf, held at Washington, D. C., in which he argued the general law that *deaf parents are*

*likely to have deaf offspring.* To illustrate his theory he adduced instances of several classes. A woman in Connecticut became partially deaf in early life, and afterward almost totally deaf. Her only child was born deaf and never learned to speak. A young man from Massachusetts came to the asylum so deaf from infancy that he could not benefit by the common schools, and he was the son of a father almost as deaf as himself. A mother in New Hampshire was partially deaf, and she had a son born in the same condition, and a daughter who lost hearing at a year old. A gentleman quite deaf in his later years became the father of one daughter in the same condition, and of another daughter whose hearing gradually ceased while yet a young woman. A granddaughter is becoming deaf, and a great-granddaughter was born totally deaf. A man in New Hampshire born deaf married a deaf woman, and their two children, a son and daughter, were born deaf. The son married a born-deaf girl, and had two children, a deaf-born son and a hearing daughter. The daughter married a hearing man, but two of her three children were deaf.

Mr. Turner gives a further summary of facts coming under his own observation in the course of eighteen years in the Hartford asylum, and records there made by former pupils on occasions of their conventions. "From these records, carefully collated and classified, including every family with children having one or both parents congenital deaf-mutes, and no others," he presents the following important statistics:

In 86 families with one parent a congenital deaf-mute there were 218 children, of whom 21 were born deaf, or about *one-tenth of the whole.*

In 24 families, both parents congenitally deaf, there were 57 children, of whom 17 were born deaf, or *about one-third of the whole.*

None of these couples were blood-kindred. None were sufferers from poverty, exposure, or the unfriendly influences of climate or disease. In none of them could any cause for the deafness of offspring be traced, save and except that one or both of the parents were deaf from birth.

B. St. John Ackers, Esq., writes: "In many cases which we ourselves inquired into *all* the children of two persons congenitally deaf were congenitally deaf also. In other families, where

only one parent was congenitally deaf, several of the children were congenitally deaf."*

In the London Conference of Head-Masters of Institutions in Great Britain, Mr. Murray gave it as one of the results of "careful historical inquiry" that intermarriages between deaf people, even when but one of the parties is deaf, is one of the causes of congenital deafness in offspring—if not in the first generation, yet in remoter progeny; and that this has been found to be the fact in every thoroughly investigated case.†

Dr. Buxton writes: "I knew the mother of three mute children, who was the daughter of a deaf-mute, and the grandfather, though his own children heard perfectly, was one of eight deaf-mutes in a family of sixteen. Of these sixteen, half were males and half females, and four of each sex could hear, while the other eight (four males and four females) were born deaf and dumb. In another case four out of a family of eight—three females and one male—were deaf and dumb. One of these deaf women,

* *Lecture, Gloucester Lit. and Scient. Institution*, p. 7.

† *Proceedings*, p. 98.

being married to a hearing husband, had two hearing daughters, each of whom by hearing husbands became the parent of a deaf son. . . . I have elsewhere shown that if a deaf person is married to one who hears, the chances of their having a deaf-mute child are 1 to 135 (less than $\frac{3}{4}$ per cent.); but if deaf persons marry together, 1 in every 20 of their offspring (5 per cent.) will be deaf-mute also."

The deaf are naturally quite unwilling to admit this, and have betimes adduced instances to refute it; but those cases have yet to stand the test of another generation or two before they can be safely pleaded against the mass of facts that have been observed. The rule doubtless has some exceptions, and may have many of them, but that does not affect the law that the inevitable tendency here, as elsewhere, is that "like begetteth like."

The Glasgow reports for 1839 mention the case of a man born deaf, then fifty-six years of age, and hence of more than average constitutional vigor, who became the father of two children, both deaf.

The thirty-fifth New York report cites 33

families in Europe and America in which were 69 deaf children, and all born deaf but one. In 13 of these families the father alone was deaf; in 8, the mother alone; and in the remaining 12 both father and mother were deaf. Two cases are given among the married pupils of that institution in which the infirmity of the parents descended directly to their children. In one case the parents—both deaf, and the mother one of seven deaf in the same family—had six children, all born deaf. In the other case one of four children was deaf. Four families sent pupils to the institution, one or both of whose parents were deaf. A table of intermarriages of the deaf is given, concerning which the estimate is made that about 1 in 20, where both parties are deaf, have deaf children; and about 1 in every 135, where but one party is deaf, have deaf children.

The report of the Kentucky institution cites the case of a family of seven deaf children of a deaf father. The same has a deaf nephew with two deaf children. His sister, though hearing, has two deaf sons, one of whom has three deaf children.

In a note of the Pennsylvania institution's admissions in 1872, two pupils are spoken of whose father and mother were congenitally deaf. The father had a brother and sister in the same condition. All of their children, four in number, were born deaf. The father's brother also married a congenitally deaf wife, and he had three deaf children,

Dr. A. Graham Bell, in a letter of reply to an official inquiry on this subject by the Pennsylvania institution, writes: "I can supply you with the names and addresses of 215 deaf-mutes in the United States who have one or both parents deaf, if you so desire."

Dr. Elliott Richardson, in a reply to the same official inquiries, speaks of "congenital deafness due to defective development in some portion of the auditory apparatus" as very liable to hereditary transmission. "This," he says, "is not so much dependent upon the existence of disease in parents as upon a want of activity in the elements of reproduction. It is quite possible—and I think statistics bear us out in the belief—that the consanguinity of parents seriously affects this process. Again, congenital

malformations or faults of development are apt to be transmitted to the offspring of parents so affected, and therefore the children of deaf-mutes, who are so from defective development of an essential portion of the auditory apparatus, will present a larger proportion of deaf-mutes than the average. When one parent is so affected and the other possessed of hearing, the tendency is less, but still above the average. According to Buxton, the proportion of deaf-mutes when one parent only is deaf is 1 in 135; when both parents are deaf, the proportion, according to the same authority, is 1 in 20 children."

In cases in which deafness is the result of constitutional weakness or disease, or has originated from a scrofulous or syphilitic constitution, Dr. Richardson says: "The disease is apt to be intensified in the children of such marriages; and in such children, therefore, as these diseases often attack the ear, an undue proportion of deaf children may be expected."

Dr. Richardson further adds that "aside from the tendency to the transmission of deafness to offspring, we must take into account, in consider-

ing the advisability of the intermarriage of mutes, their helpless condition as custodians of children, in so far, at any rate, as their language is concerned; and knowing as we do the degree to which the whole character can be poisoned by language, we can recognize the helplessness and necessary incompetence of deaf-mutes as the guardians of childhood."

From all these facts and showings it would seem to be adequately established that the law of heredity is decidedly adverse to the intermarriage of the deaf, and that such intermarriages are a fruitful cause of deafness. Though the instances may be numerous in which the offspring of such marriages escape the ill consequences, the danger in general is great, the strong tendency to the reproduction of the infirmity in successive generations exists, and an average of about 5 in 100 of the children born of deaf-mute parentage will be deaf-mutes, over against 1 in 1500 of the general average of the community at large.

In view of these presentations the remark of Dr. Turner on the subject is fully justified, where he says: "If two congenitally deaf-mutes marry

and have children, the probability that there will be congenital deafness among them becomes so great (as 3 to 5) that every consideration of philanthropy, as well as the interests of congenital deaf persons themselves, should induce their teachers and friends to urge upon them the impropriety of such marriages."*

Alfred Large in the new *Encyclopædia Britannica* says that the records of the institutions show the cases of deafness resulting from deaf-mute intermarriages to be about one-third of the whole, and so detrimental to offspring as to warrant the prohibition by law of the intermarriage of deaf-mutes with deaf-mutes.

## Impressions on Mothers.

Happenings to a mother while carrying her child may also have the effect of causing it to be born deaf as well as to bear other marks.

On this point, of which some physiologists make light, Dr. Turner says: "Some very striking facts have been furnished us." Selecting "from many instances that might be mentioned," he presents the following:

* *Proceedings*, pp. 91–96.

"In a small town in the south-easternmost part of Massachusetts there are in 4 families 11 deaf and dumb children residing in the same neighborhood. Thinking there might be some special reason for the existence of so many cases in that place, we took occasion while there some years since to inquire of the parents respecting it. Mrs. M., the mother of the four eldest of these mutes, at that time a widow, gave the following account: 'A few months previous to the birth of my second child I went to the funeral of a neighbor. While at the grave the singular appearance of a young woman attracted my attention. Some one standing near me told me that she was deaf and dumb. As I had never seen a person in her condition before, I watched her movements with great interest. As the coffin was lowered into the grave she clasped her hands, raised her eyes, and with a peculiar expression of grief and surprise uttered such a a cry as I never in my life had heard before. Her image was before me by day and by night for weeks, and her unnatural voice was constantly ringing in my ears. In due time my child was born, and, as I feared, proved to be

deaf and dumb. In after-life, whenever he was in trouble, he had the same expression of countenance as the deaf girl at the funeral, and whenever surprised into a sudden exclamation the sound of his voice was the same as hers. Of my nine children, four were visited with this calamity.'

"The nearest neighbor of this family was Mr. S. Soon after his marriage he brought his wife home, where she saw the children of Mrs. M., the first deaf and dumb persons she had ever seen. The impression made upon her mind by the misfortune of her neighbor was similar to what has already been described, and with a similar result. Her first child was deaf and dumb, as was also her fourth.

"The third family in which there were mutes was that of Capt. T. His wife previous to her marriage had never seen a deaf and dumb person. Soon after coming to her new home she was introduced to her neighbors, Mrs. M. and Mrs. S., where she saw their deaf children and was much affected by their unfortunate condition. A knowledge of the supposed cause of their deafness, and the apprehension that it

might have the same effect in her case, added much to her concern. Her first child was deaf and dumb, and also her third and fourth.

"Another neighbor, Mr. L., who had two deaf children, gave a very similar account of the matter in regard to his wife, ascribing the deafness of his children to the same cause. It may be possible that all these parents may have been mistaken as to the origin of the deafness in their families, yet when we consider that, as far as they knew, there was no hereditary tendency to this calamity in any of them, we are constrained at least to regard the coincidence of these events as not a little remarkable.

"There is another class of facts which have an important bearing upon this subject. Several families have been reported to us as having two or more deaf and dumb children in each of them, the oldest of whom were made deaf by disease, subsequent to which the others were born so.

"E. B. of Georgia lost her hearing when two years old (disease not ascertained), and had a sister afterward born deaf.

"S. M. A. of Connecticut lost her hearing at

the same age by scarlet fever. The next child of her parents was born deaf.

"S. J. G. of Maine was made deaf at two and a half years by ulcers; the next child of the family was born deaf.

"W. B. of Massachusetts lost his hearing by ulcers at eighteen months; the next child was born deaf.

"A. M. B. of Vermont became deaf by the same cause at the age of two and a half years, and, as in the other cases, the next child was born deaf.

"We have selected these from similar instances because hearing in them was not lost until after its previous existence had been ascertained. If, then, there be any connection between the accidental deafness of the first child and the congenital deafness of the next, it must be in the way already supposed, and the one event must be regarded as the cause of the other through the impression which so sad an occurrence would naturally make upon the mother."*

About thirty years ago a series of questions to parents and guardians of deaf persons was

* *Am. Annals*, i. 28–30.

issued from the office of the Secretary of the State of New York, the answers to which are preserved in the New York institution. Among these questions was this: "*Was your child born deaf? If so, was there any cause which is supposed to have operated before birth?*" In the answers received the following are a few of the cases described, which go far to corroborate the conclusions of Dr. Turner:

1. The daughter of a physician, born deaf, sprightly, with no infirmity but deafness, of which there has been nothing in any of the collateral branches of the family. Her deafness is ascribed to the fright of the mother by a deaf and dumb man boarding in the family, which occurred some months before her child was born.

2. The daughter of an intelligent tanner and currier, of whom the father says she was born deaf, and assigns as the only known cause that the child's mother some five or six months before its birth, being a Roman Catholic, wished to go to confession, which he refused to allow; whereupon she was greatly offended, and would not speak for nearly a week; and from that pas-

sionate and willful silence the child's deafness is supposed to have originated.

3. A healthy girl, in a family in which there is no hereditary taint; cause assigned for her deafness that her mother some time before her birth saw an idiot, the vision of which haunted her mind.

4. An expectant mother witnessed the pantomimes of a deaf-mute. Child born deaf. No other deafness in all the relationship, and seven other children were perfect in body and mind.

5. A woman in early pregnancy became greatly excited, so as to be unable to speak. This assigned as the cause of her child being born deaf; none other traceable.

6. The mother says, "I lost a son three weeks previous to the birth of this deaf son. The dying child kept calling for me. The friends present thought it not proper for me to witness its struggles. To prevent me from hearing the cries of the child I put my fingers in my ears, and, so far as I could, stopped my hearing. Three weeks thereafter my child was born deaf and dumb, and has remained so ever since." Has four other children with good hearing; no

other case of deafness in all the relationship; no other cause traceable for this except the circumstances named.

7. Whilst carrying the child born deaf the mother had an infant suddenly placed in her arms to hold and fondle; it expired in her hands. This gave her such a fright that she is confident it was the cause of her unborn child becoming deaf. No other causes for deafness at all traceable.

8. Deafness and deformity believed to be occasioned by a terrible fright on the part of the mother during the period of gestation. It was from the piercing shrieks of a servant. No other causes traceable; no other deafness in the connection.

Rev. B. Talbot reports two cases of congenital deafness in connection with the Iowa institution, one of each sex. The mother of one before giving birth to the child had been terribly shocked and frightened by the firing of a pistol; the other, by a violent clap of thunder. To these incidents they respectively attribute the deafness of the children.

Dr. Buxton, in a postscript to his "Inquiry

into the Causes of Deaf-dumbness," says: "I knew a case in London where the mother had died during her confinement. She had been frightened by a deaf-mute some time before, and declared her conviction that her child would prove to be deaf and dumb. It was many months after the poor woman's death before the fact could be ascertained, but it was then found that her apprehension was but too true. All the children previously born of the same parents heard perfectly. Another mother told me that before the birth of one of her children an elder one, having his head through an open window, was placed in great danger by the sudden falling of the sash upon his neck. A terrified scream summoned her to the scene, and the child was liberated; but the then unborn infant she was carrying proved afterward to be deaf and dumb, and the involuntary noise which this child made when excited was exactly like the sound by which the elder one startled their mother in his peril.

"A woman living in one of the Eastern countries, who had three children born deaf, stated that before the birth of each she had been

alarmed by a deaf and dumb beggar. After the birth of the third she never saw the man again, and all the children she had afterward possessed their hearing perfectly.

"The sudden shock of having a child brought home dead, who had been drowned, was given to me in another case as a reason for the birth soon afterward of a deaf child; and the wife of a workman, who was in the habit of taking her husband's meals to him at the place of his employment, thought that the frequent sight of a fellow-workman of his, who was deaf and dumb, led to her giving birth to a deaf child of her own.

"Another woman known to me, who had three or four deaf children out of six, stated that before the birth of the first she was summoned to the help of a neighbor who had been seized with a fit which rendered her speechless, and shortly proved fatal. The sight so affected the expectant mother as to deprive her of speech for several hours; her eldest child, subsequently born, proved deaf and dumb, as were also the third and fifth.

"Persons who have alleged that they were

frightened by the inharmonious noises uttered by the deaf have also insisted that the voices of their own deaf offspring, subsequently born, had precisely the same sound, and instantly recalled the circumstance assigned as the cause.

"The last case which I will speak of from my own knowledge is that of a woman whose house overlooked the playground of a deaf and dumb institution, and who, from watching the children at their play, ascribed to this circumstance the deafness of her own child."

The idea that unborn children could be thus affected through the imaginations or impressions of mothers has been much ridiculed. The supposed effect is regarded as mere *coincidence.* It is said that multitudes of pregnant women have such sensations with no corresponding results following, and that only when these forebodings seem to be confirmed by the event is there any note taken of them. But on the subject of sudden fright, startling impressions, images of horror, mental anguish, brooding melancholy, or overwhelming emotions and imaginations of a pregnant woman, affecting the mental or

bodily condition of the child she is carrying, this certainly may be said:

(1) It is not in the power of science to disprove it or to show its impossibility.

(2) There is nothing more firmly and universally established and fixed in the convictions of mothers, who know the most about it.

(3) The argument from analogy is powerfully in its favor.

(4) All literature, of all periods, is full of it as a thing settled in nature and common experience.

(5) The facts are so numerous, direct, and striking, and of such constant occurrence, and so wanting in any other reasonable explanation, that it is taxing credulity too much to say that they are mere coincidences or imaginations wrought up subsequent to the revelations of birth.

(6) Many and great philosophers accept and teach it as true and incontrovertible.

And, if anything of the sort ever occurs, there is reason to believe that happenings of the kind described would touch the organs of hearing as readily as any other, and have the effect of producing disability in them.

No one is likely to dispute that it is of great consequence to the health and perfectness of the child for a woman in the way of motherhood to preserve tranquillity and cheerfulness of mind during that important period, to avoid startling surprises and violent emotions, to keep her eyes and imagination from horrid spectacles, abnormities, mutilations, and defects, and to preserve herself as free as possible from great and sudden shocks upon the nervous system and all terrifying revulsions of feeling. And if failure in this tends to disabilities in the forming child, it is just as likely to hinder the right development of the delicate and complex machinery of hearing as anything else.

## Constitutional Taint.

It is hard to bring a clean thing out of an unclean. Water will not rise higher than its source. If parents have tainted blood, it is almost sure to tell upon their offspring. Scrofulous and syphilitic diseases, with their long trains of tuberculous, ulcerous, and unhealthful conditions, extending even to the third and fourth generations, may safely be put down as a

fruitful source of congenital deafness as well as of many other disabilities.

It is difficult to ascertain the facts on this delicate point. Parents and relatives of the deaf are very loath to acknowledge them if they know them, and often are in ignorance themselves. Hence precise statistics of this class are very meagre. But general physiological principles are quite competent to supply their place.

Daniel Murray of the British asylum gave it as his belief, before the Conference of Headmasters of Institutions for the Education of the Deaf in Great Britain in 1877, that the blood-taint of struma, tuberculosis, and syphilis in parentage is a prolific predisposing cause of congenital deafness in offspring. He cites Dr. Roberts, then Hon. Physician to the London asylum, as having reached the same conclusion from careful historical inquiry.

Dr. Buxton corroborates the belief that deafness is largely transmitted by some hereditary taint or family peculiarity. He says that this is so manifest in the Irish returns that a table has been constructed to show this result more clearly; and from this it appears that "in 329

cases, numbering 471 persons born in families, 222 were born deaf and dumb who had deaf-mute relations on the mother's side, and 249 of the number had relations similarly afflicted on the father's side."

Dr. Dudley Peet, in his article on the "Causes of Deafness," writes: "That the scrofulous diathesis should be assigned as one of the predisposing causes of deafness will occasion no surprise to any one the least acquainted with pathology, the deposition of tubercles being one of the results of scrofula. Tubercular matter may perchance be deposited in different parts of the ear. The scrofulous diathesis, however, so affects the whole body that inflammation is easily excited in any organ; this inflammation is of an unhealthy kind, slow to heal, producing an abnormal pus, and exceedingly liable to take on a chronic and subacute character. When the ear of a strumous patient becomes inflamed, deafness is almost sure to result unless proper medical treatment be at once resorted to. These strumous inflammations are not rare. Those of the deaf who are scrofulous form a very large proportion of the whole num-

ber; and the proportion is not much less among those who are deaf, but have lost their hearing late in life. It is evident, then, that whatever is calculated to engender the scrofulous habit is, indirectly, a cause of deafness."*

Medical writers agree that strumous and syphilitic affections, or the effects of them, are transmissible to offspring, and that deafness is among the results which they produce. All the institution reports cite scrofula, ulcers, and inflammations derivable from hereditary taint as the known causes of many cases of adventitious deafness; and much rather, then, is such taint of parental blood to be reckoned among the predisposing causes of *congenital deafness*, as well as of many other weaknesses and defects. Hence, also, as statistics prove, all conditions, modes of life, and localities which tend to develop scrofula, tuberculosis, and cretinism are precisely those which furnish the greatest number of deaf, as in the damp, cold, dark valleys and ill-ventilated houses of Switzerland.

And under this class of causes is also to be noted old age and decrepitude on the part of

* *Am. Annals*, viii. 133, 134.

the father, and all varieties of constitutional weakness in one or both parents. Healthy and vigorous offspring are seldom produced from such blood; and whatever tends to weakness of constitution in offspring tends to produce deafness along with other infirmities.

## Causes of Adventitious Deafness.

Though a child be born with hearing, the retention of that hearing may be of short duration. The chances of a hearing child becoming deaf before reaching its tenth year are much greater than were its chances of being born deaf, as the cases of adventitious deafness are seemingly much in excess of congenital deafness.

In so far as dependence is to be placed upon the exhibits in the records of our institutions, there are about *five* cases of adventitious deafness to *three* congenital.

Combining a number of reports from various institutions in different parts of the country, out of 8847 cases 3411 were born deaf, and 5436 became deaf after having been known to possess hearing.

It may not be entirely fair to rest the question

on the records of institutions, as very many children born deaf die before reaching the age at which pupils are received, or never enter these institutions. But, according to the only solid statistics at hand, our institutions have in them about 5 adventitious deaf to 3 congenital, with a slight tendency to increase in the former and decrease in the latter.

In Great Britain the case is somewhat different. Dr. Buxton reports that, "according to the returns of the status of the disease in Ireland, the proportion between congenital and acquired deaf-dumbness in that country was —congenital, 3534; acquired, 419; uncertain or unknown, 327. My own inquiries in Liverpool and London," he says, "have extended to about 1500 cases; and this is the result: congenital, 1109; acquired, 355; doubtful, 48. Of 201 pupils received into the Exeter institution up to 1852, 157 had been deaf from birth, 24 had become so from known causes, and in 20 cases the origin of deafness was doubtful. Of 101 pupils received into the Yorkshire institution, 75 were congenitally deaf and 26 had lost their hearing from various causes. As far, then,

as we have trustworthy evidence, we find the facts which bear upon this point to stand thus: a total of 6094 cases; 4875 of these were born deaf, 824 became deaf, and 395 unascertained." This would show more than seven times as many cases of congenital deafness as there are cases of acquired or adventitious deafness. In Belgium, Holland, France, Tuscany, Modena, and some other European countries the cases of congenital deafness are also far in excess of the cases of deafness intervening subsequent to the possession of hearing.

Adventitious deafness may overtake a child at any period after birth, but the greatest number of cases date prior to the third or fourth year of life. As the institutions in general take account of the deafness of their pupils, whether natal or acquired, and of the ages at which it occurred, it is not difficult to get at a general estimate on this point. Five separate tables, constructed from the reports of numerous institutions in combination, including 3663 cases of adventitious deafness, concerning which the facts were ascertained, furnish the following summary. Out of these 3663 cases—

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 973 | lost | hearing | under | one | year | of | age. |
| 1074 | " | " | between | one and two | years | of | age. |
| 574 | " | " | " | two and three | " | " | |
| 316 | " | " | " | three and four | " | " | |
| 258 | " | " | " | four and five | " | " | |
| 160 | " | " | " | five and six | " | " | |
| 112 | " | " | " | six and seven | " | " | |
| 123 | " | " | " | seven and eight | " | " | |
| 50 | " | " | " | eight and nine | " | " | |
| 23 | " | " | " | nine and ten | " | " | |

The first, second, and third years of life are thus shown to be the most disastrous to audition. From the third year onward the danger rapidly diminishes as years increase.

The proportion of instances of deafness occurring after the age of ten years is comparatively small. The tables just quoted unitedly give 66 additional cases, all on the records in which hearing was lost between the ages of ten and eighteen years, out of a total of 3729. These maturer ages are not generally embraced in the accounts, and do not much come under the view of institutions for the deaf or within the range of the subjects of this treatise, for the obvious reason that, in all ordinary cases, by the time the fifteenth or seventeeth year is reached the

general groundwork of education has been completed, and the requisites for life and further improvement already acquired, so as not to need the aid of special schools.

### CONGENITAL FEEBLENESS AND PREDISPOSITION.

The facts just stated are strongly suggestive that adventitious deafness, as well as congenital, is largely owing to inherited constitutional weakness and predisposition to affections tending to produce or develop difficulties and derangements with the powers of audition. Everything tending to cause congenital deafness, if congenital deafness is not the result, is just as operative in causing deafness after birth, especially in the first years of life, in which, as a matter of fact, the greatest number of cases of loss of hearing occur.

A strumous, syphilitic, or blood-related parentage, or any constitutional weakness or affection tending to entail disability and disease on offspring, does not lose its effect on that offspring after its birth, but is its life-inheritance. And whilst the child of such parentage may come into the world seemingly free from any defects,

the unfortunate taint and tendency are likely to be latently present, predisposing to certain forms of disease, trouble, and infirmity, which only await the arrival of the tests and conditions to call them forth. Any of the numerous ills to which infancy is exposed may develop these tendencies. A struggle for life ensues, and, though the battle may not be fatal to the child, the chances are that by reason of the weaknesses it has inherited it will come forth disabled or maimed in some part of its constitution, which may as likely be deafness as anything else.

The classes of disease to which a large number of cases of adventitious deafness are assigned as the result corroborate this view. Prominent among these are inflammations and gatherings in the head, nervous and brain fevers, epilepsy and convulsions, colds, diseases of the ears, head, throat, and tongue, ulcers, scrofula, rickets, hydrocephalus, etc., all of which are more or less suggestive of congenital feebleness and inherited constitutional weakness, making it hard for the little sufferers to hold their own amid the common trials, diseases and accidents, to which their young lives are exposed.

The deaf as a class—though with numerous individual exceptions, of course—are not generally up to the normal average of constitutional vigor and duration of life. Deafness is a general indication of damaged vitality. Idiocy, mental feebleness, ailments of the ears, head, and throat, tendency to tuberculosis and consumption, weak teeth, weak eyes, loss of sight, particular susceptibility to distressing inflammations, and great nervous excitability, frequently accompany it. These indications all point to a depreciated condition of the constitution as derived from parentage or prenatal causes, on which the intervention of the deafness largely depends. Even where hearing is not specially implicated, much of the misery that is in the world is traceable to such unfavorable inheritance, and deafness is not to be excluded from the list.

### DISEASES.

There are certain diseases which seem to have a special aptness to damage and destroy the organs of hearing.

Pre-eminent among these are scarlet fever and its sequelæ. Out of 385 cases of deafness in the

Pennsylvania institution in 1881, there were as many who lost hearing by scarlet fever alone as the whole number of congenital deaf in the institution, 55 being reported as born deaf, and 55 as having become deaf by scarlet fever. Since the years 1828–30 this fearful scourge of childhood has been the most prolific of all diseases in America in producing deafness. Nor is it much different in the reports of the British institutions.

Next to scarlet fever in destructiveness to audition is spinal meningitis or spotted fever. The report of the Pennsylvania institution just referred to exhibits an usual proportion of deafness from this cause—more than one-third (130 out of 330) of all the cases of adventitious deafness in the institution in 1881. Taking the reports in general, and inclusive of a range of years, the proportion of those who lose hearing from these two diseases is about 3 from spotted fever to 4 from scarlet fever. Particular years and localities show considerable divergencies from this ratio, here and now giving the preponderance of the mischief to one, and then and there to the other; but the two together stand out in all

the reports as by far the most prominent of all the direct causes of adventitious deafness, at least in the United States. Other types of fever, congestions, measles, whooping cough, small-pox, and particular inflammatory affections, local and general, also come in for a large credit in bringing on deafness.

### INJURIES AND ACCIDENTS.

Many cases of deafness also result from external violence to the head, the organs of hearing, or of parts tending to affect those organs.

Great frights, falls, blows on the ears and head, great noises, explosions, thunder-claps, and sudden noises that may not be specially violent, often produce total deafness by injuring the organism of the ear, paralyzing the auditory nerve, or creating inflammations which eventually destroy hearing.

Plunging into the water and diving yield many cases of deafness. Five cases of this sort were in the Pennsylvania institution in 1881, and most of the institutions continually have such to report.

Attempts to wash out and cleanse the ears of

infants and children, particularly the screwing into them of the twisted corner of a towel, the introduction of instruments in the unwise effort to get out the wax, improper syringing, and unskilled doctoring at them for slight affections, are often the causes of injury and destruction to hearing.

Poisonings from the bites of enraged animals or from the swallowing of deleterious substances have also been causes from which deafness has resulted.

Unskilled physicians also often do much harm in this direction by ignorant experimentation and mal-treatment in cases of ear-trouble, and by the abuse of powerful medicines. The misuse of mercury and of quinine is frequently noted as the cause of loss of hearing in delicate children.

These details touching the causes of deafness are thus given, not because of any value they may have in relieving those who are already the subjects of this infirmity. Where the mischief is done, it is done and cannot be helped. But the ascertained facts show that there is an

evident possibility of greatly reducing the evil by prevention. Though the causes of deafness do not always imply recklessness, guilt, or crime in somebody, yet the records are of a character to raise a presumption in that direction in a very large number of cases. It is of the greatest consequence, therefore, to have the means of determining where the evil originates, that the producing causes may be abated and avoided as far as lies within human power. To this end the public mind needs enlightenment, that every one may see and be moved to follow the moral lessons and the suggestions of practical wisdom which the facts bear with them.

## The Sad Condition of the Deaf.

As few people are aware of the number of persons who come into the world without hearing or lose it in the first years of life, still fewer have an adequate conception of the terrible disability which is upon them apart from that special education which it is the office and mission of institutions for the deaf to give.

Dr. I. L. Peet has remarked that "no human condition can be imagined more deplorable

than that of the uneducated deaf-mute. A blind person may call forth tears of pity when we think of the beauties in nature from which he is ever debarred; but, though no cheering ray may pierce his sightless eyeballs, light still bursts upon his soul. The hopelessly insane man excites our compassion as we view the wreck of mind, yet we remember the time when he enjoyed rational existence, and that if he improved this aright he is destined to the highest exercise of his moral and intellectual nature in another world. Upon the idiot we look with feelings akin to those with which we regard the brutes that perish. But in the uneducated deaf-mute we see mind, possessing all the powers of a spiritual and moral being, yet prevented from exercising them upon their appropriate objects—intellect confined within a prison-house of clay. These children of misfortune have no Father in heaven in whom to trust, no Saviour on whose merits to depend; and while they have a physical fear of death, they have no aspirations of a joyous immortality. The light of nature shines on them with a feebler radiance than upon the most

benighted of those who sit in the region and shadow of death."

All this is so far beyond the casual impressions that might be formed of the facts in the case that it is due to enter into a somewhat more particular exhibit of the oppressive infirmity.

### THE DEAF ARE DEAF.

How few penetrate to the depths of what is meant by this simple truism, even as regards the mere absence of the single sense of hearing! Having always had the normal use of hearing, it is hard to take in what a difference it would make never to have had a conception of the vast world of sound—music, rhythm, cadence, and "human voice divine;" never to have heard one word in all the years of life; never able to learn or to know so much as one's own name!

To become hard of hearing or deaf in mid-life is readily understood as a great privation. It seriously diminishes one's comforts and joys. Society and the world recede before it, and disability and embarrassment oppress on every side, at every turn, in every relation. But those

whom increasing years or the diseases and accidents of mature life thus afflict still have worlds of information and resource in which to employ their minds, and by which to keep up with the onward march of things. They still have means of converse and communication with society and friends, though at a disadvantage. They have familiarly known what is passing out of their reach and have it stored in memory. They have words and speech and can express themselves, and read, and appreciate the same as ever. All literature remains to them an open book. But it is not so with one who has never heard. To him the whole scene of life and the universe is one of unbroken and unexplained silence.

> The song of bird and bee,
> The chorus of the breezes, streams, and groves,
> All the grand music to which Nature moves,
> Are wasted melody
> To him; the world of sound a tuneless void,
> While even Silence hath its charm destroyed.

The whole world is dead stillness to him, and he is a lone stranger in it. People are around him, but he knows not the name of any one of them. He never hears a word from them,

not even from the mother that bore him and nursed him on her bosom; and he never speaks to them. He sees their motions and emotions, their busy ways and their calm repose, their pleasures of companionship, their mysterious influence over one another—some keeping near him and encouraging him with comforts, food, and shelter, and others shrinking from him and hurrying away; but there is a strange severance between him and all he sees, nothing of which he can comprehend, and about which he can ask nothing, tell nothing, hear nothing. He notices many that seem like himself, to whose fellowship he feels drawn; but none of them receive him as they receive others, and some only mock, deride, and tease him in his sincerest yearnings to be one of them. He beholds their grimaces and antics, but the words they speak are to him as if they were not. He is an isolated stranger in his own home, without fellowship, and without a name that he has ever learned; for he has never heard.

### THE DEAF ARE SPEECHLESS.

The infirmity of the deaf is not simply the

absence of hearing, as that of the blind is simply the absence of sight. What the blind person cannot see he may largely discover by means of his remaining senses or can readily learn from what others say. But it is not so with one that has never heard. He may see, feel, taste, and smell, and imperfectly learn something by means of these; but he does not know what he sees and feels, cannot be told what it is, and is in no condition to reason it out for himself; for he cannot intelligently communicate: he has no speech—he is a mute.

Deafness and muteness are two different things without essential connection, as either may exist without the other, and the removal of the one does not of itself affect the other. The hearing may, by some inaptitude, be speechless, and the deaf by certain tuition may be taught to speak. The deaf, equally with the hearing, mostly have organs ample for the use of words. Their dumbness is not so much a lack of nature as a lack of education. Their defect is not want in the apparatus of speech, but the absence of teaching in the meaning and use of words. Even with their deafness they

may be taught both language and speech, and it is only the absence of the usual education that leaves the deaf-born speechless. They are mute, not because they have not "organs fit for the prolation of words," but purely because that hearing, through which children ordinarily are drilled to use them, was not present. They do not use words for the same reason that infants do not use them; that is, they never have been taught. They are speechless for lack of teaching, and not for lack of capacity to learn and use speech.

Ordinary human speech is a thing framed exclusively to the sense of hearing. All words are simply modulations, inflections, and measures of sound, produced from the human mouth, put into forms and accents which are conventionally accepted as representatives of things. Even written words are visible signs to the eye of the invisible sounds framed and determined for the ear. And it is the vocal use of these words to express and convey ideas that constitutes what we call *speech*.

No one is born with this power, or else, left to themselves, all children would speak one and the same language, and the deaf would have it

as well as the hearing. The use of words must therefore be learned, and a knowledge of their meaning acquired. It is a laborious process even in the hearing child, and takes years, from earliest infancy on, to arrive at any degree of proficiency in it. Many never learn to use their own mother tongue with correctness and success. And the whole method of teaching and imparting the use of any word-language, in all ordinary schooling, is addressed, above all, to the ear. Gesture, showing, and the encouragement of efforts at imitation are called into requisition by mothers, nurses, and friends; but the main, if not the exclusive, avenue for the impartation of a knowledge of language and its use is the hearing ear. Take that away, and however perfect the organs of speech may be, the intelligent use of them will never come in any ordinary course of affairs. With no ear to hear the whole fabric of artificial speech falls away. The avenue through which it was meant to connect with the soul is stopped. And the child remains in the muteness of its swaddling infancy because it has never been taught to use or understand words.

And even in itself this everlasting silence is very sad and afflictive. What would not many fond parents give just to hear some few broken sentences from those sealed lips of the dear objects of their affection, bone of their bone and flesh of their flesh, as they go in and out before them, and sleep and wake, through years and years, without ever speaking a single word! Here is an expression in which a gifted mother pours out her soul over her dumb child:

She is my only girl:
I asked for her as some most precious thing,
For all unfinished was Love's jewelled ring
Till set with this soft pearl;
The shade that time brought forth I could not see;
How pure, how perfect seemed the gift to me!

Full many a soft old tune
I used to sing unto that deadened ear,
And suffered not the slighest footstep near
Lest she might wake too soon;
And hushed her brothers' laughter while she lay:
Ah, needless care! I might have let them play!

'Twas long ere I believed
That this one daughter might not speak to me;
Waited and watched, God knows how patiently,
How willingly deceived.

Vain Love was long the untiring nurse of Faith,
And tended hope until it starved to death.

Oh, if she could but hear
For one short hour, till I her tongue might teach
To call me *mother*, in the broken speech
That thrills the mother's ear!
Alas! those sealed lips never may be stirred
To the deep music of that lovely word.

My heart it sorely tries
To see her kneel, with such a reverent air,
Beside her brothers at their evening prayer,
Or lift those earnest eyes
To watch our lips, as though our words she knew,
Then move her own as she were speaking too.

I've watched her looking up
To the bright wonder of a sunset sky
With such a depth of meaning in her eye
That I could almost hope
The struggling soul *would* burst its binding cords,
And the long pent-up thoughts flow forth in words.

Her face is very fair,
Her blue eye beautiful; of finest mould
The soft white brow, o'er which, in waves of gold,
Ripples her shining hair:
Alas! this lovely temple closed must be,
For He who made it keeps the master-key.

### SOUL-IMPRISONMENT.

The absence of both hearing and speech is not the saddest feature of the condition of the deaf. What necessarily attends this privation in its influences upon mental growth and spiritual development presents a far more affecting subject of contemplation.

Aristotle was not wholly wrong when he styled the ear the organ of instruction and intelligence. Such it is in all normal cases. Of all the senses, it is the most direct and ample avenue to the soul. Fortunately, it is not the only avenue, or attempts to instruct those who have never heard would be useless and their success impossible. But to supply the place of the ear by means of the other senses requires the travelling of a very circuitous and heavy road, and even then can be only imperfectly accomplished.

The great want of the uneducated deaf is language. In specially favorable situations and in unusually bright subjects instances can be produced in which deaf-mutes, who could never hear, speak, or write, have acquired some degree

of practical knowledge and considerable adeptness in ordinary matters of domestic or mechanical employment, as well as some judgment in matters of common deportment. But this is not the case in general, and the very best are still at a very great remove below hearing persons brought up in the same conditions of life. Language, language, is the thing wanted to lift the mental and moral nature into right manhood and intelligence.

Language belongs to those characteristic marks which distinguish men from brutes, and it is also among the greatest treasures man possesses. It is not only the chief bond of human society, but the great medium of uninterrupted instruction, as it is of social companionship. If it were left to man to choose which one of three things he would prefer to retain—*sight*, *hearing*, or *language*, the other two to be taken from him—he could have no difficulty in deciding for the retention of language, great and valuable as he has learned to know both of the other two to be. Those who have no language belong to the most unfortunate of the children of men. To impart it to them is the highest good that can

be done them within the sphere of earthly existence, and the only means of bringing them into right fellowship with man, God, or heaven. But language is just what is missing in those who have never heard.

A distinguished educator of the deaf has said that language is the beginning and end of a deaf-mute's education. Give him language, the understanding, and ready command of his country's vernacular, and he is educated. Give him all else possible, without this he is and remains an isolated and helpless being.

Language is the key to all mental growth and development. It is the door through which soul-life is ventilated and fed, through which the inner man comes forth into living connection with the world of mental activity, and through which the spirit gathers in its chief stores of food and treasure. It is the grand vehicle of thought and intelligence between mind and mind. As current bank-notes in the world's exchange, so language serves in the commonwealth of intelligence. Where no language is, mind may exist, but it is undeveloped, disabled, imprisoned, shut up to

its own crude observation and experience, cut off from all ideas except those which rise within its circumscribed and stunted self, unable to express more than a moiety even of them or to find out whether they are right or wrong. Without language there can be no adequate soul-commerce; and whatever poor wares of thought, feeling, or ideas any one may have, they lie next to worthless on his hands, and die with him, who himself must needs die a mental pauper.

It is the particular work of deaf-mute education by means of the other senses to overcome this terrible deficiency, to restore to the soul the ready use of the sublime machinery of adequate language, and thus to bring it into living communication with the world of mind and intelligence. Happily, also, the good providence of God has put it in human power measurably to effect such restoration and enfranchisement. But until that deliverance comes, never hearing means no language, no connection with the living universe of intelligence, isolation beyond opportunity for improvement, imprisonment of the soul behind barriers of darkness, where it

is cramped, stifled, and impotent to help itself to freedom and light.

In such a condition the soul only grovels, and never grows—grovels without an idea of its own degradation.

### THE TESTIMONY OF EDUCATORS.

Those who have had the best opportunities of knowing the facts, and of forming just estimates of the sad condition of the uneducated deaf, fully corroborate these presentations.

The Abbé de l'Épée, an early and distinguished toiler in this department of benevolent endeavor, did not hesitate to place the uneducated deaf on a level with idiots or the beasts that perish.

Abbé Sicard, his equally distinguished disciple and successor, expressed his judgment to be that "a deaf person is a perfect cipher, a living automaton. He possesses not even the sure instinct by which the animal creation is guided. He is alone in nature, with no possible exercise of his intellectual faculties, which remain without action. As to morals, he does not even suspect their existence. The moral world

has no being for him, and virtues and vices are without reality."

M. Guyot of Gröningen, a great benefactor of the deaf, writes: "This unfortunate class are by nature cut off from the exercise of reason; they are, in every respect, like infants, and if left to themselves will be so always, only that they possess greater strength, and their passions, unrestrained by rule or law, are more violent, assimilating them rather to beasts than to men."

Herr Eschke of Berlin says: "The deaf and dumb live only for themselves. They answer to no social bond; they have no notion of virtue. Whatever they may do, we can impute their conduct to them neither for good nor for evil."

Herr Cæsar of the Leipsic institution writes: "The deaf and dumb, indeed, possess the human form, but this is almost all they have in common with other men. The perpetual sport of impressions made upon them by external things, and of the passions which spring up in their own souls, they comprehend neither law nor duty, neither justice nor injustice, neither good nor evil. Virtue and vice are to them as if they were not."

Some teachers of the deaf have taken exceptions to these statements as too strong and sweeping.

M. Bébian, a younger colaborer with Sicard, says: "Deaf and dumb persons only differ from other men by the privation of a single sense;" which is indeed true, but the sense that is wanting is pre-eminently the organ of instruction and intelligence. He further says of these unfortunates: "They judge, they reason, they reflect;" which again is true, but only on meagre subjects, within a very limited range and to very small effect. He further adds: "If education exhibits them to us in the full exercise of intelligence, it is because the instructor has received them at the hand of nature, endowed with all the intellectual faculties;" which again is true, but only with the modification that these faculties are sadly shackled and restrained of their liberty until the *Ephphatha* of a special training comes to set them free.

A venerable teacher in the Pennsylvania institution testifies that "a congenital deaf-mute is in the state of intellectual and moral darkness. Being without a language, he has but few ideas,

can reason only to a very limited extent, and is profoundly ignorant even of the most common matters which form ordinary topics of conversation among persons who hear and speak. In fine, his intellectual condition is little above that of the more intelligent brutes, and lower than the most unenlightened savages."

A principal in one of our American institutions for the deaf says: "They come to us like mere blanks; nay, worse than mere blanks, for blanks can easily be filled up, while it is a difficult task to reach these blanks of mind in order to put anything like intelligence into them."

Dr. Harvey P. Peet of the New York institution writes: "Cut off from the vast stores of knowledge of which language is the treasury and the vehicle, the deaf and dumb stand before us living monuments of that state of ignorance from which society has been slowly emerging during thousands of years. But we must admit that the consequences of their privation are, in most cases, more serious than the mere negative privation of knowledge. They are, in a great measure, sundered from human

sympathy and companionship, deprived of the excitement, the incentives to mental action, the aid and encouragement to continuous thought, which children who hear derive from the emulative play and struggle of mind among themselves, and from the notice, the counsels, the example, and the approbation of their elders. Thus victims, in part of circumstances, but still more of neglect, the faculties of the uneducated deaf and dumb, however well constituted originally, are dwarfed and distorted in their growth and development. They become stamped, as a class, with a very marked intellectual and moral inferiority, which, when impressed through early neglect, subsequent instruction cannot, in many cases, wholly remove. Such, we have no reason to doubt, has been the condition of the uninstructed deaf and dumb in ancient as in modern times. Some, no doubt, were sunk to a condition little better than idiocy. The great mass showed some signs of reason and intelligence, and could be usefully employed in manual labor. And here and there one possessed, within a small circle of friends, the means of considerable intellectual and social

enjoyment, these exceptional cases being very rare or known only to a few."

The *American Annals of the Deaf and Dumb* for October, 1854, says: "It is doubtless true that the deaf-mute, *without education*, finds himself in a state more pitiable than that of any other being who belongs to humanity. He is far below the blind—not, perhaps, in merely animal enjoyment, but in the cultivation of the intellect and of the affections. The higher department of his nature is wholly undeveloped; his countenance wears a blank and almost brutish expression; and we can scarcely wonder that he was once, in fact, regarded as but little above the spiritual level of the beasts that perish. In one respect at least he is even more to be commiserated than the insane and the idiotic. A sad picture, but true."

The Italian *Journal of Deaf-mute Education* for January, 1874, contains an able article, which says: "The deaf-mute holds an exceptional position among mankind. His natural state cannot be compared to that of the hearing babe which as yet cannot utter a word. The babe cannot talk, it is true, but hears and under-

stands the maternal word, is educated, little by little, to think, and thus gradually to express its mental conceptions. The mute grows up without culture, his intelligence never quickened by maternal accents, his heart feeling but little of the power of love. He grows up physically, his instincts are developed, but his intellect, as if paralyzed, lives a stunted and painful life. He bears no comparison with those who have lost hearing after having learned speech, for they think and live by means of the words which they once spoke, and the ideas with which they once were, and still are, familiar. Nor is an uneducated mute equal to a blind person. After his way he possibly may have ideas, but they are imperfect—rather fantasies than ideas. As to his moral nature, there is even less to console. His spirit, uneducated, steeped in the darkness of ignorance, feels not its dignity, and is driven by passion, which the reason and will, so little enlightened and cultivated, cannot control. If parents seek by kindness to save him from the bad habits he so rapidly forms, he takes advantage of the forbearance to do worse. If they use compulsion,

he may be more cautious in wrong-doing, but is likely to become deceitful and false or to grow furious and ungovernable. It is common for children to lie, but it belongs to an uneducated deaf-mute to lie with frightful readiness and incredible assurance."

Dr. Isaac L. Peet, from an extensive induction of facts and observations, says: "From this it may be inferred that by his own unaided uninformed intellect and uninstructed nature the uneducated deaf-mute does not arrive at the idea of what is really right or wrong, and is ignorant of general law, either human or divine. He may be obedient, diligent, affectionate, habitually honest, but it will be owing to the influence of kind and firm control and example, *not* to the higher moral and religious motives that are addressed to children who hear. He is often self-willed, passionate, prone to secret vices, sometimes suspicious, lacks self-control, because he cannot as well as others appreciate the consequences of his actions. He wishes to be loved and respected, and conceals his evil practices from those whom he knows would disapprove them. But he cannot distinguish

between the approbation of the good and the mere complaisance of the unthinking; is apt to mistake the laughter of the latter for applause; and when he is thwarted in his desires, the folly and criminality of which he cannot appreciate, he is apt to consider himself the victim of an unjust discrimination and oppression. He can hardly be considered accountable in any ordinary sense of the term. The cases in which uneducated deaf-mutes have been arraigned for murder are painfully numerous, considered in proportion to the number of this class of persons."

We may yet add the statement, drawn from a thorough knowledge of the facts, which is given by the writer of the article on "The Deaf and Dumb" in *Chambers's Cyclopædia*, where it is said: "While almost every one will readily admit that there is a wide difference between a deaf and a hearing child, very few who have not had their attention painfully drawn to the subject possess any adequate notion of the difference or could tell wherein it consists. Deafness touches only one bodily organ, and that not visibly, but the calamity which befalls the mind

is one of the most desperate in the catalogue of human woes. The deprivation under which the born-deaf labor is not merely, or so much, the exclusion of sound as it is the complete exclusion of all that information and instruction which are conveyed to our minds, and all the ideas which are suggested to them, by means of sound. The deaf know almost nothing, because they hear nothing. We who do hear acquire knowledge through the medium of language—through the sounds we hear and the words we read—every hour. But as regards the deaf and dumb, speech tells them nothing, because they cannot hear, and books teach them nothing, because they cannot read; so that their original condition is far worse than that of persons who can neither read nor write (one of our most common expressions for extreme ignorance); it is that of persons who can neither read nor write nor hear nor speak—who cannot ask you for information when they want it, and could not understand you if you wished to give it to them. *Your* difficulty is to understand *their* difficulty; and the difficulty which first meets the teacher is how to simplify and dilute

his instructions down to their capacity for receiving them."

### NO IDEA OF SOUL OR DEITY.

Some have taken it as a principle that the idea of God is innate. Whatever they may mean by it, the terms, in their literal signification, cannot be true. Ideas are no part of us at birth. They are productions of mental life and activity, and therefore not born with us. When the human mind reaches a certain stage of awakenment and light, there is indeed—whether from within or from without we cannot tell—a something in it or in its operations which gravitates toward the idea of a God, and has so strong an affinity for it as to take to it by a sort of spontaneity in the mental and spiritual nature. If this is what is meant by those who hold the idea of God to be innate, the fact may be admitted, but the way of stating it is objectionable and misleading. The language suggests what cannot be true. This much, however, seems to be clear: that persons who have never heard do not, prior to education, arrive at that degree of mental development and activity to

realize the dawn, generation, or entertainment of the transcendent idea of God.

The writer of the article on "The Dumb and Deaf" in the *Encyclopædia Americana* says: "After extensive observation and inquiry we cannot hear or find a single instance in which persons born deaf have conceived of a First Cause, from a view of the works of nature, without education. They describe themselves as looking at these objects like the brutes. Even those whose friends have made great efforts to communicate religious truths seldom have an idea of the Deity as a creator or benefactor."

Dr. Isaac L. Peet says: "As a consequence of the darkness in which their minds are wrapped, the uneducated deaf and dumb have no true idea of the Divinity. The natural language of signs employed by them in communication with their friends is confined to the persons, objects, and usages with which they become familiar. Rarely, if ever, has a parent been successful in drawing out their ideas beyond the pale of the sensible objects with which they are surrounded. They certainly have not been led to conceive of a thinking agent [soul] within

them distinct from their corporeal existence. They can, therefore, form no conception of God, who is a spirit. A highly-educated deaf and dumb gentleman, in reply to the question whether, previous to his admission into the institution where he received his education, he had any idea of God or the origin of the world and the beings and things it contains, used this language: 'I had none at all, nor had I any of my own soul, for it never occurred to me to seek to know what was that within me which thought and willed.' This agrees substantially with the statements elicited from very many deaf-mutes to whom similar questions have been propounded. From all these data the general conclusion may be safely deduced that the idea of God is not innate in the human mind, while a sad and moving picture is drawn of the pitiable condition of these children of misfortune. Happily, however, in the institutions for their instruction which Christian philanthropy has been instrumental in establishing we have means provided by which God brings them to a knowledge of himself."

Rev. Dr. W. W. Turner of the Hartford

Asylum writes: "The most intelligent deaf-mutes, after a careful inquiry made at different stages of their instruction, uniformly testify that they never had any idea of God or of their own soul previous to instruction—that they either had never thought on the subject, or, if they had, concluded that all things ever had been and that death was the termination of existence."

Dr. Thomas H. Gallaudet, the father of deaf-mute instruction in this country, from very careful and minute inquiry into the subject declared: "I do not think it possible to produce an instance of a deaf-mute from birth who, without instruction on the subject from some friend or at some institution for his benefit, has originated from his own reflections the idea of a Creator and Moral Governor of the world, or who has formed any notions of the immateriality and immortality of his own soul."

M. Berthier, himself an educated deaf man and for years a professor in the Paris institution, says: "It is possible that some deaf-mutes may attribute certain effects, as storms, wind, and hail, to a certain cause, and may figure

to themselves one or more extraordinary beings commanding the rain, lightning, and other natural phenomena; but a deaf and dumb person without instruction will never have a notion, even vague and confused, of a superior Existence whom it is his duty to love, revere, and obey, and to whom he must give an account of his thoughts and actions."

Dr. Harvey P. Peet, principal of the New York institution, uses this language in summing up the results of his inquiry on this point: "We feel authorized by the evidence before us to deny that any deaf-mute has given evidence of having any innate or self-originating ideas of a Supreme Being to whom love and obedience were due; of a Creator or a superintending Providence; of spiritual existences or of a future state of rewards and punishments."

And equally emphatic is the testimony given by Rev. Collins Stone of the Ohio institution, where he says: "The deaf-mute never reasons concerning the origin or the destiny of the beings and things around him. Indeed, so heavy is the hand of his calamity upon him, so nearly does it depress him to the level of

mere animal life, so dead are the germs of thought and feeling in his soul, that the great facts and truths relating to God and a future state, which would seem to be the birthright and aliment of every rational mind, rarely attract his attention or excite his curiosity. . . . The light of divine truth never shines upon his path. Even in the midst of Christian society he must grope his way in darkness and gloom to the unknown scenes of the future, unless some kind hand penetrates his solitude and breaks the spell that holds him from communion with the thought and feeling of the world."

"Thus it appears," says another teacher of these unfortunates, "that the darkness in which the deaf and dumb are enveloped is so profound that they have no inheritance in this common birthright of other men. Though bathed in light, the isolation of their minds is still complete. . . . Whatever else may be true of them, they are 'without God and without hope in the world.'" "We are on heathen ground," says one of their teachers—"yes, heathen ground as dark and inaccessible as the darkest places of the earth."

What a dignified and evangelic office, then, is that which is occupied in bringing these unfortunates across the threshold of their dungeon, in connecting their solitary souls with the world of mental and moral intelligence, in cheering their present and beautifying their future by liberating them from their winding-sheets of ignorance and silence!

### WORSE THAN BLIND.

Educationally, congenital deafness or its equivalent is a far greater disability than congenital blindness. It would not seem so to outward view. The infirmity of the blind strikes the beholder at first sight, and at once excites commiseration and commands prompt assistance according to the need; but that of the deaf requires time to discover itself and reflection to fathom its depths, while the means of rendering the required assistance are too remote and difficult to be of ready use.

Dalgarno, in his *Didascalocophos*, or "Deaf and Dumb Man's Tutor," takes up this point and says: "I will compare a deaf man with a blind man:

"1. The blind man goes to school in his cradle; this so early care is not taken of the deaf.

"2. The blind man is still learning from all that are about him, for everybody he converses with is a tutor, and every word he hears is a lecture to him, by which he either learns what he knew not or confirms what he had. The deaf man, not being capable of this way of discipline, has no teacher at all; and, though necessity may put him upon contriving and using a few signs, yet those have no affinity to the language by which they that are about him do converse amongst themselves, and therefore are of but little use to him.

"3. The blind man goes through the discipline of language in the best of his time, childhood, and under the best of teachers, women and children. The deaf man is deprived of both these opportunities.

"4. The blind man learns his language by the by, and *aliud agens;* the deaf cannot attain a language without instruction and the expense of much time and pains.

"5. The deaf man is confined to the circum-

stances of light, distance, posture of body, both in himself and him he communicates with; the blind man is free from these straitened circumstances."

Dr. Samuel G. Howe of Boston has given attention to this point, and has reasoned himself into the full conclusion that, "although sight is preferable for those who have to pursue manual labor for their own support, yet hearing, the mother of speech, is far more important for the development and improvement of the intellectual and moral faculties and for the enjoyment which comes from their exercise and from the various relations of love and affection. The eye is the key to sensuous enjoyment and to a certain range of knowledge of material things; but the ear is the real queen among the senses, and she brings us into those moral and social relations and affections from the indulgence of which the purest, highest, and most lasting happiness is derived. This is confirmed by pretty extensive acquaintance with blind persons and deaf-mutes. To the latter, speech, in its widest and best sense, is unattainable; and, although the kind of speech which they learn seems

marvellous, and is to some extent pleasurable, yet its imperfection always keeps them in that sort of isolation from other men in which imperfect knowledge of our language keeps the foreigner who sojourns among us. Hundreds and thousands of blind persons are found who are in intimate relations with seeing people, and some in every age have risen to eminence in music, in letters, in legislation, and politics; while there is hardly one deaf-mute whose name is known to history. Every consideration and a multitude of instances show that the infirmity of the blind is lighter than that of the deaf."

In this estimate Dr. Howe includes the educated deaf. But when the comparison is confined to the uneducated deaf, with whom the question specially lies, the conclusion is overwhelmingly in favor of the sightless and against those who have never heard. To the one class the world is enveloped in darkness, but they are not alone in it. They have free companionship with those who can see and know it, and who are ever telling to the ear of what is invisible to the eye. To the other class the world is a scene of absolute muteness, while they are in-

dividually alone in it, with scarce any companionship—strangers to what their nearest relatives feel and know, strangers to themselves and to their own names, with no power to ask anything of anybody, and with no power in anybody to tell them anything.

What is the seeing eye without a comprehending mind or an understanding heart? What are all the most beautiful and touching pictures of nature and life to a soul that has no quickened and receptive surface on which to receive them, and no means of retaining or exhibiting them even in the crude outlines of occasional dim impressions? What is open vision with a locked-up intellect? What can a piece of mind-clogged flesh and blood realize of the beauties of the visible creation, though lying open to its view?

### DISABILITIES IN LAW.

The notice taken of the deaf and dumb in legislation and in civil and criminal law further illustrates the sadness of their condition apart from the only education that can be given them.

The infirmity of the blind so little affects

their competency, privileges, duties, and responsibilities as citizens that common law has had no occasion to draw distinctions between the sightless and the seeing; but such is the mental and moral deficiency of the uneducated deaf that the common laws and customs of all times and countries distinguish deaf-mutes from hearing and speaking people, and have always connected serious disabilities with their infirmity.

In some of the less civilized nations of antiquity it was the approved custom and law to destroy all deaf-mute children as monstrous products of Nature which should not be suffered to live. If they could not hear and articulate at three years of age, they had to be delivered up to death. The same law may still hold in those semi-barbarous countries among whose populations no deaf-mutes have been discovered.

The word used by the Greeks and by the New Testament (Matt. 9 : 13; 11 : 5) to designate a deaf-mute means general dulness, obtuseness, mental stupidity, *lacking in sense* as in senses and speech; and the laws corresponded to this.

The Roman laws classed deaf-mutes with idiots, and disabled them from having control

even of their own private affairs, except in very rare cases, some of which were only imaginary. The code of Justinian, *Corpus Juris Civilis*, provided that if a deaf person could by word declare, or by writing with his own hand set forth his will and mind, he could make devises, execute deeds of gift and other legal instruments, and manumit slaves; but in all other cases the deaf and dumb were held incompetent for the exercise of such franchises and deemed incapable of the legal management of their own affairs. This principle has generally obtained, in more or less force and extent, wherever Roman law has penetrated among Western nations, from the fall of the Roman Empire to the present time.

During the darkness of the Middle Ages superstitious ideas and misapprehensions or forced constructions of scriptural texts were incorporated with common law, causing deaf-mutes to be regarded not only as semi-idiots, but as an ill-favored order of creatures intermediate between men and brutes, belonging to a race of half-demoniacal beings, a disgrace to their parents and incapable of salvation. The great Augustine

himself was not innocent of having contributed to this state of the public mind. The ordinary civil privileges and rights of inheritance were generally denied to deaf-mutes as wholly incompetent persons during the feudal times. No one of them was allowed to marry without a special examination of his case and a specific dispensation from the pope.

The common law, as laid down by Blackstone, classed them legally with idiots and lunatics. According to 1 Russell (*On Crimes*) and 1 Hale, "One who is deaf and dumb from birth is, in presumption of law, an idiot; and the rather because he has no possibility to understand what is forbidden by law to be done, and under what penalty."

Hon. Henry C. Deming, at the unveiling of the Gallaudet monument at Hartford, 1850, said: "Formerly the deaf and dumb were, by the presumption of our common law, classed with idiots and lunatics—presumed by this perfection of human reason to be incapable, from a want of sufficient understanding and perception between right and wrong, of any crime. They were, of course, incapacitated to aliene their estates, to

make a deed, contract, note, will, or from testifying in a court of justice—proscribed by universal consent from the rank of human beings, proscribed from all the business, employments, honors, and distinctions of life."

Much indignation, since the work of educating the deaf has come into play, has been expressed toward these old laws, and loud calls have been made for their abolition or modification. So far as respects the educated deaf these calls were not unreasonable, and have not been unheard or unheeded. But the thing required is not so much reforms of law, as commiseration and help to open the mental and moral prisons of the deaf themselves, in order to place them in right relations to society, manhood, and the dignities of life.

The universal opinion and presumption of the law with regard to the incompetency of uneducated deaf-mutes will be controverted in vain so long as the ascertained and thoroughly attested facts with reference to their mental and moral condition remain. Education is happily able to work great and saving changes in that condition; but the law must still presume ac-

cording to those facts until it is shown that such educational change has been wrought. And where such showing is made, the common law exhibits a reasonableness and justice of administration in no way discreditable to its appreciativeness and dignity.

The rule of law, as laid down by Chancellor Kent, in effect, is, that a person deaf and dumb is not on that account necessarily incompetent, but that the presumption is against him, requiring proof of capacity. If the person be of sufficient understanding and intelligence by reason of his education, the same can be readily made to appear, and in that case the presumption of the law is nullified and no injustice can be alleged. Late French, English, and American decisions concur in the ruling that where proof of understanding and competency is present the wills, deeds, etc. of deaf-mutes, if duly attested, are admissible and valid, and they can testify as witnesses.

In criminal offences indictments of deaf-mutes have sometimes been dismissed without trial, partly from difficulties in arranging legal forms of arraignment; but the courts in general do

not fail to look at the condition of the person arraigned and to require proof of his capacity to distinguish between right and wrong. The common practice, which is more and more commanding the English and American courts, is to treat an uneducated deaf-mute guilty of grave crime as so far an idiot as to be incapable of trial, but, on considerations of public safety, subject to sentence of confinement during the pleasure of the Crown, the court, or the executive—the only question being whether the individual is dangerous or not by reason of his uncontrolled passions and benighted intellect.

The Hon. George Sharswood, Chief-Justice of Pennsylvania, in answer to questions addressed to him by the writer of these pages, says: "It is not readily in my power to refer you to sources of information on the status of deaf-mutes in legislation and jurisprudence. I can only indicate to you the results which I now have in mind on the subject.

"There is no difference in the legal status of educated deaf-mutes. They are competent to make contracts, wills, and do all other acts. Of course in regard to other matters courts are

particularly careful to see that they have understood them and have not been imposed upon. They are competent witnesses, and their testimony may be taken either through a sworn interpreter of the sign language or, if they can write, in that way. In like manner, they are responsible for crimes, unless it appear that they do not know the difference between right and wrong. In England if a deaf-mute is arraigned in a criminal procedure, the jury are first charged to inquire whether he stands mute by the visitation of God, and, if so, whether he has mind enough to comprehend the proceeding against him. Whether this is the usual form of proceeding in this country I do not know.

"Mr. Greenleaf, in his work on *Evidence*, says: 'In regard to persons deaf and dumb from their birth, it has been said that in presumption of law they are idiots. And though this presumption has not now the same degree of force which was formerly given it, that unfortunate class of persons being found by the light of modern science to be much more intelligent in general, and susceptible of far higher culture, than was once supposed, yet still the presump-

tion is so far operative as to devolve the burden of proof on the party adducing the witness, to show that he is a person of sufficient understanding. This being done, a deaf-mute may be sworn and give evidence.'

"About the uneducated I cannot say. The courts will always look into the question of capacity, and proceed accordingly."

Amply humane and just, therefore, would seem to be present law and its administration with respect to the deaf and dumb. And yet, in the full exercise of that humane and reasonable spirit, it is still compelled to regard the mental and moral competency of deaf-mutes so questionable as to require evidence on that point before it can in justice and mercy be admitted. M. G. Chaudèze stated in 1882 that "under the French law the uneducated deaf-mute cannot make a valid will, since he cannot comply with the requisite formalities."

## What can be Done for the Deaf?

It thus becomes an important practical question what can be done in the way of relieving such unfortunates. Anxious parents of unhear-

ing children wish to know, and the State, charity, education, and all classes of the community have reason to inquire, what hope there is in the case. Unfortunately, there are some things which cannot be done.

### ON CURES FOR DEAFNESS.

First of all, where there never has been hearing, or where hearing has been entirely lost, no power of man can give it. This may be laid down as a fixed rule which admits of very few and very rare exceptions, if any. Where the nature of the trouble is ascertainable, remedy is as plainly impossible; and where the nature of the trouble is undiscoverable—which is very largely the case—doctoring is nothing but blind experiment, resulting in fruitless torture and damage. Examinations after death have revealed conditions which might perhaps have been treated with favorable results had the same been known during life; but surgical and medical attempts to reanimate dead hearing is like trying to give life to a dead corpse—with this difference, that it tends to make corpses. It is but a transient galvanism at best.

Dr. Itard of Paris, who perhaps had the largest experience in this particular department of any man known, could find but six reported instances in all the world of the cure of total deafness, one of which was spontaneous, and the others by extreme irritations of certain parts; but when he tried the same irritation on numerous patients, he could get no favorable results worth a mention. His unusual opportunities for examining deaf-mutes after death led him to change his theories of deafness, and to undertake other lines of treatment by the use of moxa, by perforations of the tympanum, and by injections of the Eustachian tubes; but, having experimented to the full on dozens and hundreds of tortured patients, his own account of his efforts was that in one case, as in the other, the results were only trifling and temporary at the best, and "just nothing as regards hearing."

Sir Astley Cooper in England, Hymly in Germany, and M. Deleau in France devoted all the wisdom of the profession to the subject and to experiments which seemed to promise good results, and which proved abundantly fruitful

in everything except restoring patients to the effective and permanent use of the sense of hearing.

In 1831, Mr. Charles Baker of the Yorkshire institution, England, wrote to the Glasgow *Herald* in review of this whole subject, and said: "My experience among the deaf and dumb has extended over fifteen years, and during the whole of that time I have inquired much into the physical means employed to restore hearing. I have heard of some instances of partial success in cases of acquired deafness, but I have heard of but one instance in which a totally deaf person was restored to hearing, and this was at Brussels fifteen or sixteen years ago. This case I only know by report, and have never seen it recorded. Hundreds of attempted cures have been made known to me; professional men of high character and attainments have devoted themselves to the subject, but in all cases they have ultimately despaired of success, and left the practice under the impression that nothing satisfactory could be achieved. It is now universally believed among those who have given the most impartial and

disinterested attention to the subject that there is nothing sufficiently encouraging in all that has been done to warrant the conclusion that deafness can be removed, though it may be alleviated in some cases in a slight degree; and the very few instances of its removal must be regarded as isolated exceptions which do not destroy the general principle."

Luzerne Rae of the Hartford institution wrote in 1849: "There are so few well-attested cases of the cure of congenital deafness, and the parents and friends of the deaf and dumb have been so often cheated and subjected to heavy expense by promises of cure that were never realized, that there seems to be some ground for the distrust now so generally felt of medical experimenters upon the ear."*

Dr. Gillett says that he has been personally acquainted with more than 2000 cases of endeavors to cure deaf persons, "without knowing of one successful case of treatment."

Dr. Ménière, from an experience of fifteen years in the Paris institution for the deaf, a visit of observation to most of the establish-

* *Am. Annals*, ii. 159.

ments of this description in France, Italy, Spain, Switzerland, England, and Germany, an attentive study of the best works on the subject, an habitual intercourse with men the best informed respecting it, and the examination of a very large number of deaf persons, children and adults, belonging to all classes of society, wrote to the Imperial Academy of Medicine at Paris in 1852 testifying to the utter failure of the operations of several noted professional curers of deafness, and giving his own firm conviction that "the child which, on coming into the world, is defective in hearing is irrevocably doomed to remain in an exceptional class: he is deaf and dumb; he must by absolute necessity use artificial means to make himself understood by other people; he is deaf, and he will so remain. Not one fact, warranted by sound criticism, has yet come to protest against this judgment; and what is taking place in our own time is far from supporting a contrary opinion."

Parents in their anguish on discovering that their child is deaf or tending to deafness are ready to grasp at anything that holds out the

slightest hope of preventing a life of total silence for it; but, as Mr. Syle has observed, "the final conviction, more or less strongly expressed, of Itard, Ménière, Wilde, and Morell was that, though partial or very recent deafness *may* be alleviated, profound deafness is beyond the reach of aid except by miracle." It is natural for hope to struggle to the last, but it is vain to persist in effort to reverse destiny. Total deafness is not among the curable ailments.

Leon Vaïsse, thoroughly competent to speak on the subject, has justly said: "Medicine and surgery, brought face to face with deaf-mutism, have been forced to acknowledge that they are powerless."

### LIMITS OF EDUCATION.

It is, in the next place, a mistake to suppose that it is possible, by any amount of care or education, to secure for children deaf from infancy all the immunities and pleasures of life, the same as if they were free from their infirmity. Great and blessed things can be done for them, so that they themselves have but little consciousness of their disabilities, and sometimes even fancy themselves the equals in all things,

if not indeed the superiors, of hearing people. Dr. Ménière refers to the complacency of many educated deaf persons in the resources which they possess, and speaks of it as "an illusion in which it would perhaps be generous to leave them;" but it necessarily is an illusion or the Creator was mistaken in making men with hearing ears. It is simply impossible for the deaf ever completely to overcome the disadvantages of their deafness.

The ablest and best experienced instructors of the deaf, however exalted in their ideas of what other senses can be made to do in place of the ear, are of one mind—that the progress and mental development of deaf children are much slower and more tedious than is the case with hearing children.

Leon Vaïsse pronounces it "a sad imprudence" for any one to claim for the deaf an equality in this respect with the hearing. To make a deaf child and a hearing child keep step with each other in their learning, he says, would, in a very marked degree, retard the pace of the hearing child.

Dr. G. O. Fay apologizes for the limited re-

sults in the education of the deaf by saying: "No fair-minded critic will demand of teachers the impossible feat of raising deaf-mutes, as a class, to the same identical plane of power and learning accessible to hearing persons. *Approximation only is possible.* Deaf-mutes in the race of life are, from the outset, heavily weighted." He further speaks of "ordinary failure to bring deaf pupils up to the hearing standard," and "occasionally falling far below it," as not the fault of educators, but owing to the impediments interposed by the pupils' deafness.

### METHODS OF INSTRUCTION.

Neither does it matter what method of instruction is pursued. The results, at best, are always limited by the peculiar infirmity of the pupil, and the disability cannot be effectively overcome.

The system which has hitherto most prevailed in this country looks to the teaching of the pupils a "sign-language," and by means of that and the finger alphabet to teach them to read, write, and understand the common language of the country.

The deaf thus taught are able to hold very free intercourse with each other and with those who have been at the pains to learn and use these methods of communication. But for intercourse with the great world of people who know nothing of the sign-language and the finger alphabet the only means of communication which this system imparts is reading and writing, which avail, of course, only with such as can read and write. At best, this is a cumbrous and troublesome means of intercommunication, and carries with it a world of disadvantage compared with the ordinary facilities of hearing people.

Another system, now mostly used in European countries, rejects the "sign-language" and finger alphabet, and uses ordinary speech, at first in connection with the necessary natural gestures. This is called the oral or German method, which aims to teach the vernacular language of the country directly by means of a natural mouth-and-face alphabet of literal and syllabic sounds and their combinations in words, which the pupils are taught to observe, pronounce, write, and understand.

The speaking mouth by uttering a word makes a certain visible movement. By observing this many hearing persons help themselves to a more certain perception of what is spoken to them, particularly when the hearing is somewhat dull. If any one will be at the pains to hold the form of the mouth and face in uttering the sound of a letter, and contemplate the same in a mirror, he will have before his eye the figure necessary to pronounce that sound or letter. *O*, *A*, *U*, *E*, *I*, fully uttered in succession, will at once show how different is the form of mouth and face in giving these vowel sounds; and it is the same with the consonants with their necessary breathings. One position, form, and expression gives one unvarying sound, and must hence be always the same. There is thus a natural mouth-and-face alphabet for any given language which can be readily caught by the quick eye of the deaf, so that they can be taught both to read and to reproduce it. And from these principles, by due instruction, a deaf-mute can be taught to read speech from the lips, and also to speak so as to be no longer a mute.

The means of communication which this

system or method imparts are—reading and writing, as in the other case, but in addition thereto it develops ability to read spoken language and to answer in audible speech. In other words, it aims to educate the deaf in such a way as to place them in common society on something of the same terms of intercommunication as hearing people. But under this system also the reading from the lips is generally less certain than hearing, and the answering for the most part is less ready and distinct than in the case of hearing persons.

The International Congress on the Education of the Deaf, held at Milan, Italy, in September, 1880, though with some vigorous dissent, declared itself in favor of what is called "the Pure Oral Method," which totally rejects the use of the sign-language and the finger alphabet, and relies upon speech and lip-reading as the medium of instruction. The majority of the institutions for the deaf in the world practise now on this system. Many advocate it as the normal and only proper system, and have much to say against the use of signs. Others, again, especially in America, are so devoted to

the use of signs and the manual alphabet that they are quite unwilling to hear of any other way of successfully educating the deaf. But great and blessed results have been realized by both these methods, and the world owes a debt of lasting gratitude to the men who have labored so faithfully in the working out of ways that have proved so effective in alleviating the great disability of those unfortunates who cannot be reached by the ordinary methods of education.

For some classes of the deaf the oral method is likely to achieve the best and most desirable results, and for some other classes the sign system is perhaps the only one which can be of much practical avail. But with the best system known, and in the very best hands, only moderate and limited results can be achieved, except in a few very special cases. Nothing can compensate for the absence of the hearing ear; and those who are under the misfortune of not having it are at a great and irremediable disadvantage as compared with those who have hearing and articulate speech.

It is therefore vain to hope, by any means in human power, to place those deaf from early

life upon the same plane of familiar converse with the common world of hearing people. No one can in reason expect any schools or institutions for the deaf to do for their pupils so much as that, for it does not lie in the nature of things or in human possibility.

## Early Efforts in Behalf of the Deaf.

Efforts to instruct the deaf are confined almost exclusively to the ages and nations of Christendom, and, with but small exceptions, to post-Reformation times.

Aristotle taught that man cannot be a subject of instruction otherwise than through the ear, and where his philosophy reigned it was deemed impossible to educate the deaf. Lucretius expressed the sentiment of the heathen world when he wrote—

> "To instruct the deaf no art could ever reach,
> No care improve them and no wisdom teach."

Pliny, however, tells of one Quintus Pedius, a deaf-mute, whose uncle, the orator Mesalla, taught him to paint, and who became proficient in that art; but pagan history and civilization exhibit the fewest attempts to educate the deaf.

The Justinian Code contemplates deaf-mutes as outside the range of proper humanity, and admits only the rare possibility that by some extraordinary gift of nature one might be raised to the ordinary status of a right man.

Even in the Christian ages, through which the Aristotelian philosophy still powerfully dominated, it was a very long time before we find any marked attention to the amelioration of the sad condition of these children of silence. So good and great a doctor of the Church as St. Augustine himself expressed the belief "that deafness from birth makes faith impossible, since he who is born deaf can neither hear the word nor learn it."

Venerable Bede in his history speaks of a bishop among the Anglo-Saxons of the seventh century as having taught a poor dumb boy to speak and understand sentences, but it was regarded as a miracle; and the deaf-born were universally regarded as belonging to the category of idiots and imbeciles, if not to a half-demoniacal order of beings. In France it was rated as a disgrace to any family to have a deaf-mute among its members. And it was not till

toward the end of the fifteenth century, from the writings of Radolphus Agricola, that we hear of the education of one born deaf. He tells us, however, in his *De Inventione Dialectica*, "I have seen an individual, deaf from birth, and in consequence dumb, who could understand what was written to him by others, and could also express his own thoughts in writing."

A better order of things in this department, as in all others, including both Roman Catholic and Protestant countries, began to manifest itself from the time of the Reformation.

Luther arraigned and overthrew much of the Aristotelian philosophy and with it the theory of the incapacity of the deaf to be instructed. He was clear that deaf-mutes could be taught so as to become approved Christians. When the question was raised whether deaf-mutes should be admitted to the communion, and the position was taken that they should not, he controverted it as a false position, and claimed that saving grace is for the deaf and dumb as well as for hearing persons; that the deaf-born are not without reasonable souls; that the divine favor is not withheld from them; and that they are

quite capable of showing Christian reverence and desire, as he says he himself had witnessed.

That a special instruction, suited to their condition, was to be bestowed upon them he argued from the peculiar manner in which the Saviour had healed the deaf and dumb man, and claimed that this miracle likewise testified to the extension of the divine mercy to deaf-mutes, and proved their capability of being acceptably received as proper communicants of the Church.

He thus took sides against the universal sentiment up to that time, and led the way to a better era for the deaf, as for the world at large.

Nor were these new ideas long in bearing their valuable fruits.

The Italian philosopher Jerome Cardan, who died in 1576, argued from a scientific standpoint, and maintained that the instruction of deaf-mutes, though difficult, is fully within the range of possibility. He did not himself try to put his theories into practice, but he pointed out the way, and so contributed materially to strengthen the foundations for what was to come after him.

### EFFORTS IN SPAIN.

In the latter half of the sixteenth century Spain could boast of a second Pedius in the person of Juan Fernandes Navaette, otherwise El Muda (the Mute), who had been instructed as an artist, and who by his ability enlisted the special favor of Philip II. Lope de Vega wrote his epitaph in these words: "Heaven denied him the gift of speech, that he might give greater life and eloquence to the works of his pencil; and as he could not speak himself, he made them speak for him." It was in Spain, indeed, that the education of the deaf was prosecuted with the greatest vigor and success in the times immediately following the Reformation.

### PEDRO DE PONCE.

Pedro de Ponce, sometimes called Ponce de Leon, a Spanish Benedictine monk of the convent of Sahagun (born 1520, died 1584), appears upon the page of history as one of the first and most distinguished instructors of the deaf. He was fifty-six years old when Jerome Cardan died, and doubtless derived much of his stimu-

lus to this humane work from what Cardan had written.

The accounts of this man's wonderful achievements with the deaf may be a little highly colored; but it is recorded of him that, among others, he taught a sister and two brothers of the constable of Aragon, and a son of the governor, all of whom were deaf-mutes, and that his success with them was so great that it was not long until they were able to speak Latin, Greek, and Italian, to reason logically, and to make themselves so familiar with science in general that they would have passed for persons of talent even in the eyes of Aristotle himself. In a notice of him, written by his friend Francis Valles, it is said: "He enabled those that were deaf and dumb from birth to speak, teaching them first to write the names of objects; then directing their attention to the objects themselves; and finally instructing them to repeat with their vocal organs the words they had written."

Ponce's own statement, in an instrument for the founding of a chapel, is: "With the industry which God has been pleased to give me I

have had pupils who were deaf and dumb from birth, children of great nobles and of men of distinction, whom I have taught to speak, to read, to write, and to keep accounts, to repeat prayers, to serve the Mass, to know the doctrines of the Christian religion, and to confess themselves with the living voice. To some I have taught the Latin, and to others the Latin and Greek and to understand Italian. There was one of them who received the orders of priesthood and possessed a benefice, and performed the duties of his office in reciting the breviary. This person and some others acquired natural philosophy and astrology. Another, who was heir to a majorate and marquisate, and was to follow the career of arms, in addition to his other studies, as already expressed, was also instructed in martial exercises, and was a very skilful equestrian. Moreover, these deaf-mutes distinguished themselves by their acquaintance with the history of Spain and of foreign nations. They were even skilled in political science and in other branches of knowledge, of which Aristotle believed this class of persons incapable."

Ambrose Moralez, a Spanish historian, in a work published in 1575 mentions Ponce as one of the most remarkable men of genius and industry, and asserts that "by a most perfect art of his own invention he has taught the dumb to speak;" of which this writer says he was himself the witness in a number of cases.

### JUAN PABLO BONET.

Ponce was succeeded by Juan Pablo Bonet, secretary of the constable of Castile, whose deaf-mute brother he instructed. He wrote the first regular treatise on the Art of *Teaching the Dumb to Speak*, which was published at Madrid in 1620, about three years before his death. In this work he does not refer to Ponce, though largely practising the same method, of which he seems to claim to be the inventor. He used natural signs and a manual alphabet in the beginning, and then depended mainly on writing and articulation. He gives in his book very clear directions for the teaching of deaf-mutes to speak, but refers the reading of the lips to the quickness and observation of pupils themselves.

Sir Kenelm Digby, who attended Charles I.,

then prince of Wales, in his romantic journey into Spain in 1623, speaks of a nobleman of great quality, the younger brother of the constable of Castile, "who was taught to hear the sounds of words with his eyes, if that expression may be permitted. This Spanish lord," he says, "was born deaf—so deaf that if a gun were shot off close to his ear he could not hear it—and consequently he was dumb. To remedy this unhappy accident physicians and surgeons had long employed their skill, but all in vain. At last there was a priest who undertook the teaching him to understand others when they spoke, and to speak himself that others might understand him; for which attempt at first he was laughed at, yet after some years he was looked upon as if he had wrought a miracle. In a word, after strange patience, constancy, and pains, he brought the young lord to speak as distinctly as any man whatever, and to understand so perfectly what others said that he would not lose a word in a whole day's conversation."

Digby says that he knew this young nobleman personally, and appeals for the truth of

his statements to Charles himself, who had taken pains to inquire into the case, and was an eye-witness of what had been accomplished. Without doubt this was one of Bonet's pupils.

### RAMIREZ DE CARION.

Contemporary with Bonet, another Spaniard, Ramirez de Carion, was very successful in teaching the deaf to speak. Neumann records from a work by Pietro de Castro, physician to the duke of Mantua, that "a son of the prince Thomas in Savoy, the count of Priego, and the count of Fresno, brother of the constable of Castile, who were dumb, now speak plainly and without difficulty; and there are many other examples among private persons who have attained the like facility through the labors of Emmanuel Ramirez de Carion."

It is remarkable, however, that in a country in which the education of the deaf sprang up at a period so early to a degree of perfection so high it should so suddenly have died away. After the death of Carion we hear but little more of it. By the middle of the eighteenth century we meet with the statement of a Spanish

author, who says: "The art of teaching the deaf and dumb to speak had its origin in Spain, and I firmly believe that there is not at present, nor has been for a long time, a single person in Spain who has cultivated it or been benefited by it, while the foreign nations have successfully practised it."

It is further stated that to this present, of all Christian countries, Spain and Spanish America are those in which the least has been done or is doing for the deaf and dumb.

### IN ITALY.

In Italy, after Cardan, very little interest was taken in the deaf until the seventeenth century, when a few writers expressed themselves on deaf-mute instruction, but without putting their theories into practice. It is mentioned that some Italian deaf-mutes were instructed during the seventeenth century, but the work seems to have been limited, and to have been done by Spaniards, and not Italians.

### IN GREAT BRITAIN.

Much greater interest and activity was shown

in Great Britain during this period. In 1648 appeared the *Philocophus; or, The Deaf and Dumb Man's Friend*, by Dr. John Bulwer, in which many important facts are given respecting the education and capacities of the deaf.

In 1653 an elaborate work by Dr. John Wallis, one of the professors in the University of Oxford, was published, entitled *Grammatica Linguæ Anglicanæ*, in the preparation of which the author was led to the consideration of the subject of the education of the deaf and how they could be taught. In a letter to Mr. Boyle, dated March, 1662, he speaks of having entered upon the task of teaching a person to speak and to understand language who had lost all hearing at five years of age. He says: "The task itself consists of two very different parts, each of which doth render the other more difficult; for beside that which appears on first view, to teach a person who cannot hear to pronounce *the sound* of words, there is that other of teaching him how to *understand* a language and know the signification of those words, whether spoken or written, whereby he may both express his own sense and understand the thoughts of

others; without which latter that former were only to speak like a parrot or write like a scrivener, who, understanding no language but English, transcribes a piece of Latin, Welsh, or Irish; or like a printer of Greek or Arabic, who knows neither the sound nor signification of what he printeth." At the conclusion of the letter he speaks of having succeeded with his pupil beyond his expectations; that in the short time of two months he had got over the greatest difficulties of both departments; that there was hardly any word which (with deliberation) he could not pronounce; and that he had already learned the meaning of a considerable part of those English words which are in most frequent use. From that time forward considerable attention was given to the subject.

About thirty-six years later, in giving advice to Mr. Thomas Beverly respecting the education of five deaf and dumb children, Wallis speaks of having long before taught Mr. Alexander Popham, born deaf, to speak distinctly—to understand the language so as to express his mind tolerably well. In the same letter he speaks of Daniel Whaley and "some other deaf persons"

whom he had in good measure taught to speak, write, and understand language.

In 1669, Dr. William Holder published his *Elements of Speech*, with an appendix giving the method he employed in the education of a deaf and dumb person whom he had taken in hand ten years previously, and whom he had successfully taught to speak.

In 1670 appeared George Sibscota's *Treatise concerning those who are born Deaf and Dumb*, and in 1680 one of much more consideration, entitled *Didascolocophus; or, The Deaf and Dumb Man's Tutor*, by George Dalgarno, which is reprinted in *Am. Annals*, vol. ix. pp. 14–64. It is a purely speculative treatise, but is praised by Dugald Stewart for having reasoned out *a priori* the principles of a subject then very imperfectly understood, and having anticipated some of the much-lauded work of De l'Épée and Sicard by nearly a century. Without putting his theories in practice, he well reasoned out that a deaf person may be as successfully taught to understand and use a language as one blind; that it is quite as possible to teach a mute to speak as it is to teach a blind person to write; and that

he can also be taught to read and understand the speech of others, since "the eye can perceive all the distinctions of letters in the speaker's face which the ear can do in his voice."

It was by such works and practical efforts that the way was prepared in Great Britain for the Braidwoods and the Watsons, who did so much for this cause in their day.

### BRAIDWOOD, WATSON, GALLAUDET.

Up to his time perhaps no one conducted the education of the deaf, in all its branches, with more distinguished success than Mr. Thomas Braidwood, who seems to have been the first, at least in Great Britain, who kept a regular academy for this purpose. He entered on his profession with a single pupil at Edinburgh in 1764, but the number of scholars increased rapidly, and he continued to teach a large school for many years in Edinburgh, and afterward at Hackney, near London, until his death in 1806. The celebrated Dr. Johnson visited Braidwood's academy in 1773, and says that he there found "a college of the deaf and dumb, who are taught to speak, to read, to write, and to practise

arithmetic by a gentleman whose name is Braidwood. The number which attends him is, I think, about twelve, which he brings together into a little school and instructs according to their several degrees of proficiency. . . . The improvement of Mr. Braidwood's pupils is wonderful. They not only speak, write, and understand what is written, but if he that speaks looks toward them, and modifies his organs with distinct and full utterance, they know so well what is spoken that it is an expression scarcely figurative to say that they hear with the eye."*

Braidwood never published his system, on the plea that it could not be properly described in words with sufficient precision to be of use to others; but the real motive probably was that he wished to retain the secrets of his profession for his own advantage. His assistant and relative, Dr. Watson, who continued the work after Braidwood's death, has, however, given quite elaborate accounts of the way in which the deaf were taught by Braidwood, as improved upon by himself. A full sketch of Watson's method is given in the *Edinburgh*

* See *Journey to the Western Islands.*

*Encyclopædia*, 1816. Dr. Watson's book on the subject is pronounced, without any exception, the best that had appeared relative to the education of the deaf.

It was to educate himself in the Braidwood-Watson methods that the elder (then young) Gallaudet was sent to Europe when the effort was made to establish a school for the deaf in Connecticut, which afterward became the mother of so many similar institutions in this country. But the extravagant demands of time and money made of him in England to secure the object of his mission, and his accidental falling in with representatives of the school of De l'Épée, then in London through fear of Napoleon, became the occasion of his going to Paris, whence he brought back with him the sign system and an educated deaf-mute to assist him in teaching it; and so gave to the American institutions for the deaf that method which has mostly prevailed on this continent.

### IN HOLLAND.

In Holland the possibility of educating the deaf was first advocated by Peter Montans in

1655; and in 1667, Mercure van Helmont propounded the theory of a facial alphabet, the natural alphabet of speech, and succeeded in the teaching of deaf persons to speak intelligibly.

About the year 1690, John Conrad Amman, a Swiss physician located at Amsterdam, undertook the education of a young girl at Haarlem who had been born deaf. "He succeeded so well in this task that in two months she could not only read distinctly, but could write down whatever was slowly spoken to her; and at last could support a conversation on any subject, and reply with promptness to those who interrogated her—hearing, as it were, by the eyes." In 1692 he published an account of his method, entitled *Surdus Loquens*, issued in an enlarged form in 1700 under the title of *Dissertatio de Loquela*, which was published also in English, and is still held in esteem as a valuable practical treatise on the method of teaching the deaf to speak, notwithstanding some peculiar fancies about the Hebrew language. It is not thought equal in all its branches to the writings of Wallis on the same subject, which

Amman had not seen until his *Dissertation* was printing, but is pronounced superior to Holder's work.

After Amman's death there does not appear to have been any one to carry on the work of caring for the deaf in Holland for a long series of years.

### IN GERMANY.

Germany has a better record. Œcolampadius, a contemporary and some time coadjutor of Luther, had under his instruction at Basel a deaf-mute pupil who had learned to understand him through the eye. Joachim Pasch, a Lutheran clergyman of Brandenburg, who died in 1578, had a daughter that lost her hearing when six months old, whom he successfully instructed. Wild, Niederoff, and Schulze each also successfully taught deaf pupils to read, write, and speak, and during the seventeenth century Camerarius, Schott, Morhoff, and Malinkrot by their writings and efforts had been pointing out the way and laying the foundations for the new age in this department which came with the next hundred years.

About the commencement of the eighteenth

century Kerger and his sister opened a school for deaf-mutes in Silesia, one of the first regular schools for deaf-mutes we know of, which proved a marked success. What had been previously written in Germany and other countries respecting this work Kerger had thoroughly studied, and himself made some important practical advances in ideas and methods. He taught articulation, but held that "every deaf-mute who is endowed with common intelligence by the sense of sight alone can be taught to write and to understand the meaning of what he reads, even though he may not have been taught to speak at all;" which, he said, required more time, more patience in the teacher, and more labor from the pupil. His instruments of instruction were natural gesture, writing, vocalization, pictures, and the alphabet of the lips. Of the manual alphabet he says nothing. Though not unknown in his day, it does not seem to have been used by him.

About the same time George Raphel, a countryman of Kerger, educated three of his daughters who were deaf-mutes, and in 1718 gave to the world a work entitled *Kunst Taube und*

*Stumme reden zu lehren*, in which he describes his methods. The eldest of these children died at the age of twenty, but her father's testimony is that she had learned to speak with distinctness and naturalness; that her voice could not be distinguished from that of a hearing person; that she was able to read with rapidity and intelligence; that she mingled in general society upon such equal terms that her peculiar infirmity was scarcely noticeable; and that her general knowledge, especially her knowledge of religious truth, was so extensive and clear as to win the admiration of all who came into converse with her. And from that time forward, during the whole course of the eighteenth century, an unbroken succession of teachers and writers continued to expand and perfect the theory and practice of the art of instructing the deaf. Among these names are those of Lichwitz, Bucher, Baumer, Jorisson, Solrig, Weber, Lasius, Arnoldi, and Heinicke.

### SAMUEL HEINICKE.

Lucerne Ray in vol. i. of *American Annals* says that "Samuel Heinicke holds the same place in

Germany in respect to the education of the deaf and dumb which Ponce occupies in Spain, De l'Épée in France, Braidwood in Scotland, and Gallaudet in America." He was born near Weissenfels in 1729, died in 1790. He is described as "a man of pure character, gifted with the rarest qualities of genius, of a clear intellect and a noble heart, who, full of the liveliest sympathies for the misfortunes of his fellowmen, made it the labor of a life consecrated to God and humanity. The most eminent of his contemporaries—such men as Klopstock, Büsch Reimarus, Hensler, Unzer, and many others of similar character—sought his acquaintance, acknowledged his merit, and paid him the tribute of their admiration." First a soldier, then an escaped prisoner of war, then a student of the University of Jena, then the private teacher in a number of distinguished families, he rose to eminent distinction as an educator of the deaf.

In 1754–55 he applied himself with the happiest results to the instruction of a deaf-mute boy at Dresden. Then he fell in with another at Eppendorf, whom he proceeded to educate with no less success. In 1772 he had

four deaf pupils under his instruction, to whom others were soon added. His successes won for him such honorable repute in this work that he attracted the attention of Frederick Augustus, elector of Saxony, who invited him to undertake the management of a public school for the deaf at Leipsic. Heinicke gladly accepted the call, and arrived there in May, 1778, with nine deaf pupils, and thus commenced the first Government school for the deaf ever founded. It was the beginning of a great work, and the institution still continues in vigorous operation.

Heinicke taught by the oral method, with some peculiarities of his own invention; for he seems to have used certain substances to affect the pupil's *taste* in order the more deeply to impress the memory. He was specially opposed to the use of the sign-language as propounded by De l'Épeé. Germany for the most part has ever since followed the essential features of his method, minus his medicaments for the taste. His success as an educator of the deaf, by the unanimous testimony of his contemporaries, was very great. He is honored as the most distinguished of all German instructors of the

deaf, and also as the founder of the widespread "German method" of deaf-mute education.

### IN FRANCE.

France, though afterward highly distinguished in the art of the instruction of the deaf, has but little to show in this department prior to the middle of the eighteenth century. So little was known there of what had been accomplished in this line in the neighboring kingdoms that so late as the beginning of the eighteenth century "a respectable French writer, Father Dumoulin, expressly denied the possibility of educating the deaf and dumb." It was not until June, 1749, that public attention seems to have been drawn to the subject through Rodriguez Pereire.

M. Vaïsse indeed says that "the history of the education of deaf-mutes [in France] extends back to a time more remote than that of Pereire, inasmuch as the Parliament of Toulouse in 1669 confirmed the will, written in his own hand, of a deaf-mute from birth, who had learned, through whose assistance no one knows, to express himself in written language."

It appears also, from Père Daire's *History of*

*Amiens*, that there was something of a deaf-mute school in that place in 1746, conducted by one Étienne de Fay, himself deaf from his birth, 1670–80. He had been a pupil at the abbey of St. Jean in Amiens from the time he was five years old. He was a man of remarkable genius, and was so effectually taught that he became a man of letters, a mathematician, a sculptor, an architect, and a personage of marked accomplishments. But there is no evidence that he was equally successful in teaching others. Evidently, no great results came from his school. Père Andre visited it in 1746, but had nothing to say except to note the remarkable learning and mastery of knowledge and art which this man personally possessed. It is very questionable whether the deaf, however accomplished themselves, are proper persons to teach the deaf.

### RODRIGUEZ PEREIRE.

This man was from Portugal. He had been professionally practising as an instructor of the deaf in small special classes. In 1749 he obtained a hearing from the Royal Academy of Sciences in Paris, which reported favorably of his work.

The statement is that he exhibited two deaf-born young persons whom he had instructed, and who, according to the official report, could understand whatever was addressed to them, either in writing or by signs, and reply either in writing or *vivâ voce*, and could read and pronounce all sorts of expressions in French, and were acquainted with grammar and arithmetic, and could be communicated with by the motions of the lips alone.

Pereire, however, made a profound secret of his method, and refused to reveal it except for very exorbitant considerations, which the Government was unwilling to pay. He never taught more than twelve pupils at a time, and bound each by solemn oath not to make known his method of instructing them.

Two years after his first exhibition to the Academy he made another, in which his success created great wonder and enthusiasm, and the committee appointed to testify to the result concluded its report in these words: "It is proved that M. Pereire possesses a remarkable talent for teaching the deaf and dumb to read and speak; that his method must be an excel-

lent one, as his pupils make greater progress in knowledge in the same space of time than children who have all their senses in perfection [?]; and that a system of so great public interest and advantage should receive every possible encouragement."

But as Pereire was all the while looking to his own gain and advantage, rather than the founding of a general benevolent work, no great gain to the deaf in general came from his brilliant successes, except the demonstration publicly given of what can be done for these unfortunates in the way of education. It has since been pretty well ascertained that he used natural signs, articulation, the labial and manual alphabets, writing and reading, as his principal instruments.

In 1756, M. Ernauld undertook the education of two deaf-mutes at Bordeaux, with whom he was successful, and also made good progress with a third. He claimed to be the inventor of the methods he followed, which, however, were essentially those of Pereire.

From the Royal Academy's report it would appear that prior to Pereire's lessons some other

persons had here and there been engaged in teaching certain deaf and dumb children, among them Father Vanin. Ernauld also mentions one Rosset, a theological professor at Lausanne, and one Rousset near Nimes, as having been engaged in this work, but we are without accounts of their methods or success.

### ABBÉ DE L'ÉPÉE AND SICARD.

In 1760, the Abbé Charles Michel de l'Épée fell in with a few deaf and dumb persons, for whom he sympathetically undertook to do what he could in continuation of their instruction, begun by Father Vanin, lately deceased. He was helped in these efforts by the work published by Bonet one hundred and fifty years previously, which contained a manual alphabet identical in the main with the one-handed alphabet now in use. The charitable and self-denying devotion of De l'Épée, and the somewhat loud publicity given to his efforts, brought him the good fortune of a much more general reputation and influence than ever had been enjoyed by his predecessors.

The *Edinburgh Encyclopædia* (1816) says of

him that he was industrious, ingenious, and singularly benevolent; but that as a teacher of the deaf and dumb "he was greatly inferior to most of his predecessors in the soundness of his principles and the utility of his practice, and, in order to secure the glory which he loved, seems occasionally to have indulged in an empiricism which it became him to despise."

De l'Épée gradually formed a private seminary for the teaching of the deaf. Though not repudiating the oral method, he instituted a system of signs on which he laid great stress, and which, with various modifications and additions, was largely accepted by subsequent institutions in France, Great Britain, and the United States. The expenses of his school were mostly borne by himself. He gave his instructions gratuitously. Numbers accordingly came to be taught or to be initiated into his method. The degree of advancement, however, to which he carried his pupils was never very high, particularly in the direction of intellectual development. Even the Abbé Sicard, his pupil and successor, who carried on the school after De l'Épée's death in 1789, did not hesitate to criti-

cise his method and work, and made some important advances on them. But the zeal and devotion of De l'Épée had succeeded in establishing a school, and putting into form and use a system of teaching by a sign-language, which have had a very influential place in the history of the education of the deaf.

Roch Ambroise Curcurron Sicard, born 1742, sent by the bishop of Bordeaux to study the method of De l'Épée, became the master of a school for the deaf in Bordeaux in 1786, and in 1789 was made the director of the De l'Épée School in Paris, which he continued until the national Government adopted it in 1793, and made it the Royal Institute of Paris. It still continues its beneficent work, but has of late abandoned the De l'Épée-Sicard system of teaching by the sign-language.

As the private school of Heinicke was the germ of the Government institution at Leipsic, established sixteen years before, so the private school of De l'Épée and Sicard became the Government institution in Paris—the first two Government schools for the deaf in all the world.

### Modern Institutions.

This nineteenth century has proven to be the Augustan age of education for the deaf. Prior to A. D. 1800 there were but six institutions for the deaf known to exist, besides the two named, the one established at Leipsic, the other in Paris. But since that time they have wonderfully and deservedly multiplied in all civilized countries, nations, and states. They are now to be found in nearly all parts of the habitable globe, doing a most beneficent work.

Governments have not generally become as liberal toward these benevolent endeavors as they ought to be or as toward the general cause of education; but by the combined activities of Church, State, and the charitable consideration of humane people much glorious work has been done, and is more and more doing, for the relief of these children of silence from their terrible mental and spiritual imprisonment.

The world in many respects may have been weakening and degenerating, but in this particular our age has shown a growth and vigor of char-

itable and humane activity unknown to preceding centuries.

The easiest and shortest way, perhaps, of giving a bird's-eye view of the condition of this department of benevolent effort will be to present a table of all the institutions and schools for the deaf throughout the world, giving the latest known statistics of the number of pupils under instruction and the number of teachers engaged in teaching them, with an indication of the methods pursued in each.

Such a list, as far as then known to the compilers, was given in the *American Annals for the Deaf and Dumb*, in the January number for 1882. Perfect accuracy throughout was not claimed. Many blanks were left unfilled for lack of definite information. The reports in some instances were less recent than desirable. Various new institutions doubtless have sprung up since. Two in Mexico are now known to exist which are not included in the list. Many of those named have also grown since the dates given. Possibly, also, some private and Church schools have been omitted, as knowledge of them is difficult of access. The totals in the case

are therefore to be taken as much below the actual facts at the present time. But, as no better can be done, these showings are appended to this volume, with the statistics of the American institutions corrected up to the latest reports.

The institutions marked in 1882 as in a state of transition from the manual to the oral method of instruction are here given as now *oral* schools, as they doubtless, in the main, have by this time become.

Some further explanations are also necessary with reference to the indications of methods. The degrees of mixture in these respects are too various to admit of exact classification, and so are somewhat summarily given:

1. The *manual* method is that way of instruction which employs the sign-language, the finger alphabet, and writing as the exclusive or chief means of educating the deaf, and which looks to the development of facility in the comprehension and use of written language as its principal object.

2. The *oral* method is that system of instruction in which the use of signs is reduced to the minimum, which discards the sign-language

and finger alphabet, depends on speech, lip-reading, and writing for the giving of instruction, and aims to teach the pupils to speak and understand speech, as well as to read and write.

3. The *combined* method is that in which several distinct methods are used with the same pupils, or in which the general instruction is given to all pupils by means of the manual method, with the special training of some in articulation and lip-reading as an ornamental and extra accomplishment.

4. Where the *manual and oral* methods are both signified the meaning is that the institution uses the manual method for some and the oral method exclusively for others, the pupils being separated into two distinct schools, though under the same general management, and sent to one or the other as is judged best in each individual case.

## TABLE OF THE INSTITUTIONS FOR THE DEAF IN THE WORLD.

| Location. | When established. | Number of Pupils. | | Teachers. | Method. |
|---|---|---|---|---|---|
| | | Male. | Female. | | |
| AUSTRALIA.—1879. | | | | | |
| Sidney, New South Wales | 1860 | 28 | 25 | 4 | |
| Melbourne, Victoria | 1860 | 46 | 34 | 5 | |
| Adelaide, South Australia | 1874 | . . . | . . . | . . . | |
| Three institutions in Australia | . . . | 74 | 59 | 9 | |
| AUSTRIA-HUNGARY.—1878. | | | | | |
| Vienna | 1779 | 81 | 36 | 7 | Oral. |
| St. Pölten | 1846 | 29 | 20 | 4 | " |
| Linz | 1813 | 38 | 42 | 5 | " |
| Klagenfurt | 1849 | 15 | 7 | 3 | " |
| Görz | 1840 | 63 | 36 | 7 | " |
| Hall (Tyrol) | 1830 | 20 | 16 | 4 | " |
| Trent | 1843 | 16 | 22 | 3 | " |
| Prague | 1786 | 86 | 49 | 14 | " |
| Brünn | 1852 | 69 | 54 | 4 | " |
| Lemberg | 1830 | 42 | 28 | 4 | " |
| Graz | 1831 | 49 | 37 | 5 | " |
| Leitmeritz | 1867 | 22 | 8 | . . . | " |
| Budweis | 1859 | 38 | 46 | . . . | " |
| Vienna (Hebrew) | 1844 | 66 | 41 | . . . | " |

| | | | | | |
|---|---|---|---|---|---|
| Hürteldorf (near Vienna) | 1870 | 12 | 4 | . . . | Oral. |
| Waizen (Hungary) | 1802 | . . . | . . . | . . . | " |
| Budapest (Hungary) | 1876 | 37 | no sex given. | . . . | " |
| Seventeen institutions in Austria-Hungary | | 646 | 446 | 60 | |
| BELGIUM.—1879. | | | | | |
| Antwerp | 1835 | 46 | . . . | . . . | Oral. |
| Brussels | 1835 | . . . | 112 | . . . | Combined. |
| Woleuve St. Lambert | 1835 | 99 | . . . | . . . | Oral. |
| Ghent | 1822 | 50 | . . . | . . . | " |
| Ghent | 1822 | . . . | 54 | . . . | " |
| Bruges | 1836 | 75 | 62 | . . . | Combined. |
| Liège | 1830 | 143 | 100 | . . | " |
| Maeseyck | 1844 | 19 | . . . | . . . | " |
| Maeseyck | 1840 | . . . | 14 | . . . | " |
| Namur | 1840 | 50 | 40 | . . . | Oral. |
| Ten institutions in Belgium | . . . | 482 | 382 | | |
| BRAZIL.—1879. | | | | | |
| Rio de Janeiro | 1867 | 32 | . . . | 3 | |
| DENMARK.—1880. | | | | | |
| Copenhagen (royal institution) | 1807 | 72 | 70 | 15 | Manual. |
| " (school) | 1850 | 77 | 67 | 19 | Oral. |
| " (institution for the higher classes) | 1871 | 1 | 5 | 4 | " |
| " (home for adult girls) | 1869 | . . . | 34 | 3 | " |
| Four institutions in Denmark | . . . | 150 | 176 | 41 | |

| Location. | When established. | Number of Pupils. | | Teachers. | Method. |
|---|---|---|---|---|---|
| | | Male. | Female. | | |
| FRANCE.—1880. | | | | | |
| Paris | 1765 | 250 | . . . | 24 | Oral. |
| Angers | 1777 | 20 | 24 | . . . | Combined. |
| Bordeaux | 1783 | . . . | 200 | 24 | Oral. |
| Nogent-le-Rotrou | 1808 | 13 | 12 | . . . | |
| Auray | 1812 | 37 | 22 | . . . | |
| Rhodes | 1814 | 18 | 19 | . . . | |
| St. Étienne | 1815 | 69 | . . . | . . . | Combined. |
| Caen | 1816 | 39 | 40 | 16 | Oral. |
| Pas-de-Calais | 1817 | 37 | 22 | . . . | |
| Le Puy | 1818 | 55 | 26 | 9 | Combined. |
| Besançon | 1819 | . . . | 35 | . . . | |
| Bouches-du-Rhône | 1819 | 39 | 19 | . . . | |
| Lyons | 1824 | 50 | 40 | 9 | Manual. |
| Besançon | 1825 | 32 | . . . | . . . | |
| Toulouse | 1826 | 44 | 31 | . . . | |
| Clermont | 1827 | . . . | 22 | . . . | |
| Nancy | 1828 | 67 | 48 | . . . | |
| St. Étienne | 1828 | . . . | 108 | 18 | Combined. |
| Laval | 1830 | 43 | 28 | 8 | " |
| Albi | 1832 | 29 | 30 | 13 | Manual. |
| Haumont | 1833 | 23 | 4 | . . . | |
| Ronchin-Lille | 1834 | 95 | . . . | 9 | Oral. |

| | | | | | |
|---|---|---|---|---|---|
| Fives | 1835 | . . . | 40 | . . . | |
| Orléans | 1835 | . . . | 41 | . . . | |
| Rouen | 1835 | 23 | 19 | . . . | |
| Pont l'Abbé | 1838 | 26 | 20 | 9 | Oral. |
| Poitiers | 1838 | 94 | . . . | 10 | " |
| Vizille | 1838 | . . . | 23 | . . . | |
| St. Brieuc | 1838 | 13 | 12 | . . . | |
| Orléans | 1839 | 52 | . . . | 6 | Combined. |
| Saint Médard les Soissons | 1840 | 90 | 88 | 20 | Oral. |
| Grénoble | 1840 | 12 | . . . | . . . | |
| Chambèry | 1841 | 64 | 30 | 11 | Manual. |
| Vaujours | 1843 | 6 | . . . | 1 | " |
| Déols | 1846 | . . . | 8 | 1 | |
| Aurillac | 1846 | 7 | 7 | . . . | |
| Fougères | 1846 | 6 | 20 | . . . | |
| Brou | 1847 | . . . | 40 | 5 | Oral. |
| Larnay | 1847 | . . . | 55 | . . . | |
| Fontainebleau | 1848 | . . . | 5 | 1 | |
| Montpelier | 1850 | 14 | 28 | . . . | |
| Alençon | 1852 | 18 | 18 | . . . | |
| Avignon | 1853 | . . | 8 | 1 | |
| Cahors | 1854 | . . . | 15 | . . . | |
| Paris | 1854 | 10 | 10 | 5 | Oral. |
| Bourg | 1856 | 30 | . . . | 4 | " |
| St. Hippolyte du Fort | 1856 | 23 | 28 | 6 | " |
| Nantes | 1856 | 70 | . . . | 8 | " |
| Gap | 1856 | . . . | 10 | 1 | |
| Embrun | 1856 | 6 | 2 | 1 | |

| Location. | When established. | Number of Pupils. | | Teachers. | Method. |
|---|---|---|---|---|---|
| | | Male. | Female. | | |
| FRANCE.—*Continued.* | | | | | |
| Bas-la-Reine | 1861 | . . . | 25 | . . . | |
| Moingt | 1864 | . . . | 7 | 1 | |
| Veyre | 1866 | . . . | 6 | 1 | |
| Saint Laurent du Pont | 1870 | 40 | . . . | 5 | Oral. |
| Bordeaux | 1870 | 52 | . . . | 5 | Combined. |
| Alger | 1872 | 5 | 5 | 2 | Manual. |
| Lyons | 1872 | 5 | 5 | 2 | Oral. |
| Clermont-Ferrand | 1873 | 31 | . . . | 4 | " |
| Paris | . . . | . . . | . . . | . . . | " |
| Villeneuve les Avignon | . . . | . . . | . . . | . . . | |
| Sixty institutions in France | . . . | 1656 | 1301 | 240 | |
| GERMANY.—1881. | | | | | |
| *East Prussia.* | | | | | |
| Königsberg | 1817 | 85 | . . . | 10 | Oral. |
| Königsberg | 1873 | 108 | . . . | 10 | " |
| Braunsberg | 1844 | 77 | . . . | 5 | " |
| Angerburg | 1833 | 128 | . . . | 8 | " |
| Tilsit | 1881 | 13 | . . . | 1 | " |
| *West Prussia.* | | | | | |
| Marienburg | 1833 | 117 | . . . | 7 | Oral. |

| | | | | |
|---|---|---|---|---|
| Elbing | 1870 | 34 | 2 | Oral. |
| Schlochau | 1873 | 72 | 4 | " |
| Graudenz | 1876 | 53 | 5 | " |
| Dantzig | 1881 | 30 | 3 | " |
| Oliva | 1881 | 27 | 3 | " |
| *Brandenburg.* | | | | |
| Berlin | 1788 | 84 | 12 | Oral. |
| Berlin | 1875 | 136 | 13 | " |
| Wriezen | 1881 | 33 | 5 | " |
| *Pomerania.* | | | | |
| Stettin | 1839 | 96 | 8 | Oral. |
| Cöslin | 1861 | 89 | 6 | " |
| Bütow | 1865 | 19 | 2 | " |
| Laurenburg | 1867 | 23 | 3 | " |
| Stralsund | 1837 | 24 | 2 | " |
| Demmin | 1881 | 10 | 2 | " |
| Berlinchen | 1881 | 58 | 6 | " |
| *Posen.* | | | | |
| Posen | 1831 | 124 | 11 | Oral. |
| Schneidemühl | 1872 | 111 | 10 | " |
| Bromberg | 1881 | 43 | 5 | " |
| *Silesia.* | | | | |
| Breslau | 1821 | 160 | 11 | Oral. |
| Liegnitz | 1831 | 82 | 6 | " |
| Ratibor | 1836 | 160 | 14 | " |

| Location. | When established. | Number of Pupils. | | Teachers. | Method. |
|---|---|---|---|---|---|
| | | Male. | Female. | | |
| GERMANY.—*Continued.* | | | | | |
| *Saxony.* | | | | | |
| Halberstadt | 1828 | 58 | . . . | 6 | Oral. |
| Weissenfels | 1829 | 48 | . . . | 6 | |
| Halle-on-the-Saal | 1835 | 56 | . . . | 9 | " |
| Osterburg | 1878 | 30 | . . . | 3 | " |
| Erfurt | 1822 | 61 | . . . | 5 | " |
| *Schleswig-Holstein.* | | | | | |
| Schleswig | 1787 | 115 | . . . | 14 | Oral. |
| Schleswig | . . . | . . . | . . . | . . . | " |
| *Hanover.* | | | | | |
| Hildesheim | 1829 | 101 | . . . | 13 | Oral. |
| Stade | 1857 | 89 | . . . | 10 | " |
| Osnabrück | 1857 | 81 | . . . | 10 | " |
| Emden | 1844 | 43 | . . . | 4 | " |
| *Hessen-Nassau.* | | | | | |
| Camberg | 1820 | 84 | . . . | 10 | Oral. |
| Frankfort-on-the-Main | 1827 | 25 | . . . | 5 | " |
| Homberg | 1837 | 84 | . . . | 9 | " |

| | | | | | |
|---|---|---|---|---|---|
| *Westphalia.* | | | | | |
| Langenhorst | 1841 | 74 | . . . | 7 | Oral. |
| Petershagen | 1839 | 66 | . . . | 7 | " |
| Büren | 1830 | 39 | . . . | 4 | " |
| Soest | 1831 | 80 | . . . | 9 | " |
| *Rhine Province.* | | | | | |
| Aachen | 1838 | 73 | . . . | 6 | Oral. |
| Brühl | 1854 | 86 | . . . | 7 | " |
| Kempen | 1841 | 57 | . . . | 4 | " |
| Cologne | 1828 | 80 | . . . | 11 | " |
| Neuwied | 1854 | 80 | . . . | 6 | " |
| Trier | 1881 | 75 | . . . | 6 | " |
| Elberfeld | 1881 | 36 | . . . | 3 | " |
| Essen | 1881 | 47 | . . . | 3 | " |
| Fifty-two institutions in Prussia | . . . | 3658 | . . . | 362 | |
| *Bavaria.* | | | | | |
| Munich | 1826 | 40 | 34 | 10 | Oral. |
| Hohenwarth | 1877 | . . . | 58 | 5 | " |
| Straubing | 1835 | 35 | 26 | 4 | " |
| Frankenthal | 1825 | 22 | 16 | 2 | " |
| Regensburg | 1839 | 29 | 8 | 2 | " |
| Bamberg | 1834 | 12 | 14 | 5 | " |
| Bayreuth | 1823 | 8 | 10 | 1 | " |
| Zell | 1872 | . . . | 56 | 4 | " |
| Nuremberg | 1832 | 20 | 13 | 3 | " |

| Location. | When established. | Number of Pupils. | | Teachers. | Method. |
|---|---|---|---|---|---|
| | | Male. | Female. | | |
| GERMANY.—*Continued.* | | | | | |
| *Bavaria.—Continued.* | | | | | |
| Fürth | 1875 | 6 | 5 | 1 | Oral. |
| Altdorf | 1831 | 7 | 2 | 1 | " |
| Würzburg | 1835 | 37 | 17 | 6 | " |
| Augsburg | 1851 | 46 | . . . | 3 | " |
| Dillengen | 1847 | . . . | 52 | 6 | " |
| Fourteen institutions in Bavaria | . . . | 262 | 311 | 63 | |
| *Saxony.* | | | | | |
| Leipzig | 1778 | 68 | 60 | 18 | Oral. |
| Dresden | 1828 | 113 | 86 | 25 | " |
| Plauen | 1872 | 24 | 13 | | |
| Three institutions in Saxony | . . . | 205 | 159 | 43 | |
| *Würtemberg.* | | | | | |
| Gmünd | 1817 | 30 | 26 | 6 | Oral. |
| Gmünd | 1869 | 24 | 16 | 4 | " |
| Esslingen | 1825 | 23 | 16 | 4 | " |
| Nürtingen | 1846 | . . . | . . . | 4 | " |
| Winnenden | 1824 | 14 | 17 | 3 | " |
| Wilhelmsdorf | 1837 | 22 | 17 | 3 | " |

| | | | | | |
|---|---|---|---|---|---|
| Heiligenbronn | 1860 | 7 | 17 | 3 | Oral. |
| Seven institutions in Würtemberg | . . . | 120 | 109 | 27 | |
| *Baden.* | | | | | |
| Meersburg (formerly Pforzheim) | 1826 | 67 | 40 | 10 | Oral. |
| Gerlachsheim | 1874 | 58 | 43 | 9 | " |
| *Hesse.* | | | | | |
| Friedberg | 1837 | 32 | 36 | 9 | Oral. |
| Bendheim | 1840 | 55 | 27 | 10 | " |
| *Mecklenburg-Schwerin.* | | | | | |
| Ludwigslust | 1840 | 29 | 26 | 7 | Oral. |
| *Oldenburg.* | | | | | |
| Wildeshausen | 1820 | 27 | 19 | 4 | Oral. |
| *Saxe-Weimar.* | | | | | |
| Weimar | 1820 | 16 | 14 | 4 | Oral. |
| *Brunswick.* | | | | | |
| Brunswick | 1822 | 27 | 20 | 5 | Oral. |
| *Hamburg* | 1827 | 34 | 29 | 6 | " |
| *Lübeck* | 1828 | 4 | 6 | 1 | " |
| *Bremen* | 1827 | 10 | 10 | 2 | " |
| *Alsace-Lorraine.* | | | | | |
| Ruprechtsau (formerly Colmar) | 1826 | 57 | 35 | 9 | Oral. |
| Strasburg | 1880 | 10 | 7 | 2 | " |
| Metz | 1875 | 29 | 17 | 7 | " |
| Ninety institutions in Germany | . . . | 5608 | | 580 | |

| Location. | When established. | Number of Pupils. | | Teachers. | | Method. |
|---|---|---|---|---|---|---|
| | | Male. | Female. | Male. | Female. | |
| GREAT BRITAIN.—1879. | | | | | | |
| Aberdeen, N. B., Belmont Street | 1819 | 14 | 7 | 1 | . . . | Manual. |
| Bath, 8 and 9 Walcot Parade | 1844 | 6 | 10 | . . . | 2 | Combined. |
| Belfast, Ireland | 1831 | 49 | 35 | 5 | 1 | " |
| Boston Spa, Yorkshire | 1870 | 45 | 41 | . . . | 5 | " |
| Brighton, Sussex | 1842 | 48 | 36 | 3 | 2 | |
| Bristol, Tyndall's Park | 1844 | 25 | 14 | 2 | 2 | Manual. |
| Doncaster, Yorkshire | 1829 | 75 | 52 | 6 | 2 | Combined. |
| Dublin, Ireland, St. Joseph's | 1842 | 210 | . . . | 11 | . . . | Manual. |
| " " St. Mary's | 1846 | . . . | 200 | . . . | . . . | " |
| " " Claremont, Glasnevin | 1816 | 29 | 23 | 2 | 3 | " |
| Dundee, Scotland | 1846 | 12 | 7 | 1 | 1 | " |
| Edinburgh, Henderson Row | 1810 | 33 | 27 | 3 | 1 | Combined. |
| " Donaldson's Hospital | 1850 | 72 | 43 | 5 | 2 | " |
| Exeter, Devonshire | 1826 | 29 | 12 | 2 | . . . | |
| Edgebaston, near Birmingham | 1812 | 69 | 51 | 2 | 5 | Combined. |
| Glasgow, Scotland | 1819 | 68 | 52 | 4 | 3 | " |
| Hull, Dock Street | 1869 | 8 | 12 | 1 | . . . | Manual. |
| Llandaff, South Wales | 1862 | 11 | 10 | 1 | 1 | " |
| Liverpool, Oxford Street | 1825 | 50 | 43 | 3 | 3 | Combined. |
| London, Old Kent Road, S. E. | 1792 | 86 | 72 | 9 | 5 | Oral. |
| " 11 Fitzroy Square, W. | 1872 | 35 | 32 | 3 | 5 | " |
| " Lower Clapton, E. | 1851 | . . . | 40 | 1 | 2 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| London, Walmer Road, Notting Hill . . | 1866 | 14 | 11 | 2 | 1 | Oral. |
| " Wilmot St., Bethnal Green . . . | 1874 | 36 | 29 | 1 | 3 | " |
| " Winchester St., Pentonville . . . | 1875 | 16 | 25 | | 2 | " |
| " Bell St., Edgeware Road . . . . | 1876 | 12 | 9 | | 1 | " |
| " Victory Place, Walworth . . . . | 1875 | 13 | 12 | | 1 | " |
| " Upper Grange Road, Ber . . . . | 1879 | 7 | 3 | . . . | 1 | " |
| " Castlebar Hill, Ealing . . . . . | 1878 | 3 | 3 | 1 | . . . | " |
| " Holland Road, Kensington . . . | . . . | . . . | . . . | . . . | 1 | " |
| Manchester, Old Trafford . . . . . | 1823 | 92 | 67 | 5 | 5 | Combined. |
| Margate, Kent . . . . . | 1862 | 83 | 59 | 6 | 4 | " |
| Newcastle-on-Tyne, Mooredge . . . . . | 1838 | 60 | 40 | 4 | 1 | " |
| Swansea, South Wales . . . . . | 1847 | 21 | 13 | 2 | 1 | " |
| Northampton . . . . . | . . . | . . . | . . . | . . . | . . . | Oral. |
| Thirty-four institutions in Great Britain . . . | | 1331 | 1090 | 86 | 66 | |

| Location. | When established. | Number of Pupils. | | Teachers. | Method. |
|---|---|---|---|---|---|
| | | Male. | Female. | | |
| ITALY.—1880. | | | | | |
| Genoa . . . . . | 1801 | 46 | 40 | 10 | Combined. |
| Milan . . . . . | 1805 | 32 | 20 | 15 | Oral. |
| Modena . . . . . | 1822 | 22 | . . . | 3 | " |
| Siena . . . . . | 1828 | 53 | 34 | 16 | " |
| Verona . . . . . | 1830 | 19 | 10 | 8 | " |
| Palermo . . . . . | 1834 | 29 | 17 | 5 | " |
| Turin . . . . . | 1835 | 48 | 40 | 12 | " |
| Brescia . . . . . | 1836 | 24 | . . . | 4 | " |

| Location. | When established. | Number of Pupils. | | Teachers. | Method. |
|---|---|---|---|---|---|
| | | Male. | Female. | | |
| ITALY.—*Continued.* | | | | | |
| Crema | 1840 | . . . | 21 | 4 | Oral. |
| Vicenza | 1840 | . . | 6 | 2 | " |
| Rome | 1841 | 45 | 36 | 9 | " |
| Bergamo | 1844 | 43 | 11 | 10 | " |
| Modena | 1846 | . . . | 32 | 4 | " |
| Cremona | 1847 | . . . | 29 | 4 | " |
| Venice | 1849 | . . . | 29 | 6 | " |
| Bologna | 1850 | 63 | 40 | 14 | " |
| Bologna | 1850 | . . . | 26 | 4 | " |
| Como | 1852 | . . . | 20 | 6 | " |
| Oneglia | 1852 | 29 | . . . | 3 | " |
| Milan | 1853 | 60 | 53 | 12 | " |
| Mantua | 1853 | . . . | 10 | 8 | " |
| Naples | 1855 | 40 | 43 | 8 | " |
| Pavia | 1856 | 21 | 28 | 13 | " |
| Brescia | 1856 | . . . | 11 | 3 | " |
| Lodi | 1856 | 55 | 19 | 9 | " |
| Catanzaro | 1859 | 22 | . . . | 4 | " |
| Casoria | 1860 | . . . | 30 | 5 | " |
| Molfetta | 1863 | 29 | . . . | 3 | " |
| Molfetta | 1865 | . . . | 18 | 3 | " |
| Genoa | 1866 | . . . | 44 | 6 | " |

| | | | | | |
|---|---|---|---|---|---|
| Cagliari | 1869 | . . . | . . . | . . . | Oral. |
| Venice | 1870 | 30 | . . . | 6 | " |
| Assisi | 1872 | 10 | . . . | 2 | " |
| Chiavari | 1874 | 11 | . . . | 4 | " |
| Naples | 1877 | 84 | 7 | 12 | " |
| Thirty-five institutions in Italy | . . . | 815 | 676 | 237 | |
| JAPAN.—1880. | | | | | |
| Funa yamachi, Tokio Ku, Kiota | 1878 | 26 | 14 | 5 | Manual. |
| Hoyensaka machi, Higashi Ku, Ozaka | 1879 | 11 | 14 | 2 | " |
| Two institutions in Japan | . . . | 37 | 28 | 7 | |
| NETHERLANDS.—1880. | | | | | |
| Gröningen | 1790 | 115 | 86 | 19 | Combined. |
| St. Michielsgestel | 1840 | 74 | 72 | 11 | " |
| Rotterdam | 1853 | 67 | 51 | 10 | Oral. |
| Three institutions in the Netherlands | . . . | 256 | 209 | 40 | |
| NORWAY.—1880. | | | | | |
| Trondhjem | 1824 | 29 | 30 | 11 | |
| Christiania | 1848 | 50 | 44 | 11 | Combined. |
| Christiansland | 1850 | 44 | 26 | 6 | Oral. |
| Bergen | 1850 | 32 | 28 | 6 | Combined. |
| Christiania | 1881 | . . . | . . . | . . . | Oral. |
| Five institutions in Norway | . . . | 155 | 128 | 34 | |

| Location. | When established. | Number of Pupils. | | Teachers. | Method. |
|---|---|---|---|---|---|
| | | Male. | Female. | | |
| PORTUGAL.—1881. | | | | | |
| Porto | 1870 | 7 | 1 | 1 | |
| RUSSIA. | | | | | |
| St. Petersburg | 1806 | . . . | . . . | . . . | Combined. |
| Warsaw | 1817 | . . . | . . . | . . . | " |
| Odessa | 1849 | . . . | . . . | . . . | " |
| Three institutions in Russia | . . . | . . . | . . . | . . . | |
| SPAIN.—1881. | | | | | |
| Madrid | 1805 | 30 | 46 | 3 | Combined. |
| Barcelona | 1816 | 36 | 29 | 3 | " |
| Salamanca | 1863 | 9 | 2 | 2 | " |
| Santiago | 1864 | 11 | 7 | 2 | " |
| Burgos | 1868 | 16 | 11 | 2 | " |
| Saragossa | 1871 | 1 | 2 | 1 | " |
| Seville | 1873 | 22 | . . . | 3 | " |
| Seven institutions in Spain | . . . | 125 | 97 | 16 | |
| SWEDEN.—1881. | | | | | |
| Stockholm | 1809 | 83 | 50 | 12 | Combined. |

| | | | | | |
|---|---|---|---|---|---|
| Karlskrona | 1858 | 24 | 21 | 7 | Combined. |
| Göttenburg | 1859 | 21 | 11 | 4 | |
| Hjorted | 1859 | 18 | 12 | 4 | Combined. |
| Stockholm | 1860 | 7 | 13 | 4 | |
| Göttenburg | 1862 | 12 | 7 | 3 | |
| Rephutt | 1862 | 20 | 9 | 3 | |
| Hernösand | 1867 | 19 | 13 | 3 | |
| Lund | 1871 | 40 | 15 | 8 | Combined. |
| Falun | 1873 | 12 | 8 | 3 | Oral. |
| Gumpeten | 1874 | 17 | 14 | 3 | |
| Alborga | 1874 | 11 | 8 | 2 | |
| Orebro | 1875 | 15 | 10 | 4 | Oral. |
| Wenersborg | 1877 | 8 | 15 | 3 | " |
| Wadstena | 1878 | 35 | 20 | 4 | Manual. |
| Skara | 1879 | 28 | 24 | 5 | " |
| Bollnäs | 1880 | 15 | 15 | 2 | Combined. |
| Seventeen institutions in Sweden | . . . | 385 | 265 | 74 | |
| SWITZERLAND.—1878. | | | | | |
| Zurich | 1827 | 28 | 15 | 5 | Oral. |
| Frienisberg, Berne | 1822 | 60 | . . . | 5 | " |
| Wabern, Berne | 1824 | . . . | 33 | 3 | " |
| Hohenrain, Lucerne | 1832 | . . . | 27 | 4 | " |
| Riehen, Basle | 1838 | 23 | 23 | 5 | " |
| St. Gallen | 1859 | 26 | 22 | 6 | " |
| Aarau | 1835 | 17 | 12 | 2 | " |
| Zofingen, Aargau | 1837 | 19 | 18 | 3 | " |

| Location. | When established. | Number of Pupils. | | Teachers. | Method. |
|---|---|---|---|---|---|
| | | Male. | Female. | | |
| SWITZERLAND.—*Continued.* | | | | | |
| Liebenfel's, Aargau | 1850 | 9 | 3 | 1 | Oral. |
| Moudon, Vaud | 1869 | . . . | 30 | 3 | " |
| Geneva | . . . | . . . | 15 | 2 | " |
| Eleven institutions in Switzerland | . . . | 182 | 198 | 39 | |
| UNITED STATES.—1886. *Public Schools.* | | | | | |
| Hartford, Conn. | 1817 | 109 | 76 | 17 | Combined. |
| Washington Heights, N. Y. | 1818 | 264 | 149 | 15 | " |
| Philadelphia | 1821 | 285 | 217 | 36 | Man., oral, and com. |
| Danville, Ky. | 1823 | 109 | 81 | 12 | Combined. |
| Columbus, Ohio | 1829 | 241 | 206 | 26 | " |
| Staunton, Va. | 1839 | 51 | 45 | 12 | " |
| Indianapolis, Ind. | 1844 | 207 | 165 | 20 | " |
| Knoxville, Tenn. | 1845 | 89 | 61 | 8 | " |
| Raleigh, N. C. | 1845 | 69 | 56 | 8 | Oral and manual. |
| Jacksonville, Ill. | 1846 | 325 | 238 | 31 | Combined. |
| Cave Spring, Ga. | 1846 | 57 | 41 | 7 | Manual. |
| Cedar Spring, S. C. | 1849 | 39 | 35 | 4 | Combined. |

| | | | | | |
|---|---|---|---|---|---|
| Fulton, Mo. | 1851 | 138 | 102 | 13 | Combined. |
| Baton Rouge, La. | 1852 | . . . | . . . | . . . | |
| Delavan, Wis. | 1852 | 150 | 86 | 14 | Combined. |
| Flint, Mich. | 1854 | 189 | 145 | 18 | " |
| Jackson, Miss. | 1854 | 50 | 40 | 7 | " |
| Council Bluffs, Iowa | 1855 | 121 | 171 | 15 | " |
| Austin, Texas | 1856 | 91 | 57 | 10 | " |
| Kendall Green, near Washington, D. C. | 1857 | 106 | 22 | 14 | |
| A. Kendall School | 1857 | 47 | 22 | 5 | Combined. |
| B. National Deaf-Mute College | 1864 | 59 | . . . | 9 | Manual. |
| Talladega, Ala. | 1858 | 49 | 25 | 6 | Combined. |
| Berkeley, Cal. | 1860 | 86 | 51 | 10 | " |
| Olathe, Kan. | 1861 | 136 | 103 | 14 | " |
| Buffalo, N. Y. | 1862 | 80 | 70 | 11 | Oral and combined. |
| Faribault, Minn | 1863 | 88 | 69 | 9 | Combined. |
| New York, N. Y. | 1867 | 113 | 85 | 15 | Oral. |
| Northampton, Mass. | 1867 | 51 | 53 | 13 | " |
| Little Rock, Ark. | 1867 | 62 | 50 | 7 | Combined. |
| Frederick City, Md. | 1868 | 55 | 57 | 10 | " |
| Omaha, Neb. | 1869 | 68 | 50 | 8 | " |
| Boston, Mass. | 1869 | 40 | 47 | 9 | Oral. |
| Fordham, N. Y. | 1869 | 114 | 157 | 19 | Combined. |
| Romney, W. Va. | 1870 | 47 | 32 | 6 | " |
| Salem, Oregon | 1870 | 15 | 13 | 3 | " |
| Baltimore, Md. | 1872 | 11 | 6 | 3 | " |
| Colorado Springs, Col. | 1874 | 24 | 20 | 5 | " |
| Chicago, Ill. | 1875 | 24 | 23 | 6 | Manual. |

| Location. | When established. | Number of Pupils. | | Teachers. | Method. |
|---|---|---|---|---|---|
| | | Male. | Female. | | |
| UNITED STATES.—*Continued.* | | | | | |
| Rome, N. Y. | 1875 | 104 | 66 | 12 | Combined. |
| Cincinnati, O. | 1875 | 19 | 20 | 2 | Manual. |
| Edgewood, near Wilkinsburg, Pa. | 1876 | 113 | 61 | 11 | Combined. |
| Rochester, N. Y. | 1876 | 100 | 88 | 14 | " |
| Portland, Me. | 1876 | 29 | 24 | 6 | Oral. |
| Providence, R. I. | 1877 | 16 | 16 | 4 | " |
| St. Louis, Mo. | 1878 | 30 | 24 | 3 | Manual. |
| Beverly, Mass. | 1879 | 12 | 10 | 3 | Combined. |
| Sioux Falls, Dakota | 1880 | 28 | 12 | 3 | Manual. |
| Milwaukee, Wis. | 1883 | 17 | 18 | 4 | Oral. |
| Scranton, Pa. | 1883 | 10 | 8 | 1 | " |
| Chambersburg, near Trenton, N. J. | 1883 | 67 | 52 | 7 | Combined. |
| Salt Lake City, Utah | 1884 | 15 | 5 | 2 | Manual. |
| Malone, N. Y. | 1884 | 42 | 14 | 5 | Combined. |
| St. Augustine, Fla. | 1885 | 7 | 1 | 2 | " |
| Vancouver, W. T. | 1886 | 12 | 8 | 3 | " |
| New Orleans, La. | 1886 | 11 | 5 | 1 | Manual. |
| Evansville, Ind. | 1886 | 17 | 6 | 2 | " |
| Fifty-five public schools in United States | | 4508 | 3364 | 540 | |
| *Denominational and Private Schools.* | | | | | |
| Mystic River, Conn. | 1869 | 8 | 9 | 4 | Oral. |

| | | | | | |
|---|---|---|---|---|---|
| Norris, Mich. | 1875 | 27 | 9 | 3 | Oral. |
| St. Francis, Wis. | 1876 | 21 | 6 | 3 | Combined. |
| Baltimore, Md. | 1877 | . . . | . . . | . . . | Oral. |
| Hannibal, Mo. | 1881 | 8 | 14 | 1 | Combined. |
| Englewood, Ill. | 1882 | 16 | 14 | 7 | Oral. |
| Philadelphia, Pa. | 1885 | 10 | 2 | 2 | " |
| St. Louis, Mo. | 1885 | 4 | 19 | 3 | " |
| Santa Fé, N. M. | 1885 | 2 | 3 | 1 | Manual. |
| Cincinnati, Ohio | 1886 | 2 | 5 | 2 | Oral. |
| Ten denominational and private schools | . . . | 98 | 81 | 26 | |
| Fifty-five public schools | . . . | 4508 | 3364 | 540 | |
| Total in United States | . . . | 4606 | 3445 | 566 | |
| CANADA.—1886. | | | | | |
| Mile-End, near Montreal | 1848 | 105 | . . . | 28 | Manual and oral. |
| Montreal | 1851 | . . . | 230 | 44 | " |
| Halifax, N. S. | 1857 | 43 | 35 | 5 | Combined. |
| Belleville, Ont. | 1870 | 161 | 112 | 15 | " |
| Montreal | 1870 | 26 | 20 | 4 | " |
| Portland, N. B. | 1873 | . . . | . . . | . . . | Manual. |
| Frederickton, N. B. | 1882 | 9 | 8 | 2 | Combined. |
| Seven schools in Canada | . . . | 344 | 405 | 98 | |

## SYNOPSIS.

| Countries. | Number of Institutions. | Pupils. | Teachers. | Oral. | Manual. | Combined. | Oral and Manual. |
|---|---|---|---|---|---|---|---|
| Australia | 3 | 133 | 9 | | | | |
| Austria-Hungary | 17 | 1,092 | 60 | 17 | | | |
| Belgium | 10 | 864 | . . . | 5 | . . . | 5 | |
| Brazil | 1 | 32 | 3 | | | | |
| Denmark | 4 | 326 | 41 | 3 | 1 | | |
| France | 60 | 2,957 | 240 | 15 | 4 | 6 | |
| Germany | 90 | 5,608 | 580 | 90 | | | |
| Great Britain | 34 | 2,421 | 152 | 10 | 4 | 13 | |
| Italy | 35 | 1,491 | 237 | 34 | . . . | 1 | |
| Japan | 2 | 65 | 7 | . . . | 2 | | |
| Netherlands | 3 | 465 | 40 | 1 | . . . | 2 | |
| Norway | 5 | 283 | 34 | 2 | . . . | 2 | |
| Portugal | 1 | 8 | 1 | | | | |
| Russia | 3 | . . . | | | | | |
| Spain | 7 | 222 | 16 | . . . | . . . | 7 | |
| Sweden | 17 | 650 | 74 | 3 | 2 | 5 | |
| Switzerland | 11 | 380 | 39 | 11 | | | |
| United States | 65 | 8,051 | 566 | 13 | 10 | 38 | 3 |
| Canada | 7 | 749 | 98 | . . . | 1 | 4 | 2 |
| Total | 375 | 25,797 | 2,197 | 204 | 24 | 83 | 5 |

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